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LATHYRUS SATIVUS, THE VETCHLING.

BY R. STEWART MCDOUGALL, M.A., B.SC.

(*Continued from page* 11.)

Effects of L. sativus on other animals.

Swine.—Paralysis and spasm. In the herbal mentioned earlier I find it stated that swine fattened on the meal lost the use of their hind limbs, but grew very fat lying on the ground.

Cattle.—Experimentally the records are too meagre to warrant any hard and fast statement, for while one breeder fed the seeds ground and scalded, in the proportion of three pounds at a time to fattened bullocks and they did well, I have heard of cases where the seeds were blamed for injuring milch cows.

Sheep have been fed on small quantities without harm.

As to other animals, Watt quotes Don thus:—"Pigeons lose their power of flight by feeding on the seed, especially when young. Poultry will not readily eat it, but geese eat it without apparent damage."

Theories as to the Poisonous Principle.

1st. A volatile alkaloid not existing in the free state, but produced by some proteid ferment, whose action can be destroyed by heat. The presence of ferments in the vegetable world is now generally admitted. Such are present in very minute quantities, and they are only active within well defined ranges of temperature, being killed when exposed to a high temperature, say, on boiling.

2nd. May be due to an albumose or globulin. If this were so, as suggested by heat destroying the poisonous principle, we could suggest an analagous case where, in Abrus precatorius, another leguminous plant with poisonous seeds, the poisonous action is destroyed by boiling. The seeds of this plant cause weakness and rapid breathing, but no paralysis. The poisonous effect is gradually lessened as the temperature is raised from 50° C. to 70° C., until at 80° C. the activity is almost entirely reduced. Watt quotes Astier as having isolated an alkaloid which displays the poisonous properties of the seed. So far I have not been able to trace the "paper" containing Astier's results, but at present I am following with much interest a series of analyses and researches being conducted by Mr. Irvine of Granton. That these will prove very interesting is certain, but at present we will not say more than that experiments so far have not in his hands revealed the presence of an alkaloid such as Astier mentions, but rather tend to suggest the presence of some albumose.

3rd. Poisoning by organisms. One observer made some cultivations from L. sativus seeds similar to those fed to a suffering horse in Liverpool.

These cultivations showed a bacillus resembling that of the mouse septicæmia, but as the seeds were very dirty, covered with rodent excrement, the bacillus of the cultivations proves nothing. As the washed seeds showed no such organisms on being experimented with, the bacillus theory is no longer upheld.

Whatever the poisonous principle may be, we hope that those now working at the seeds will succeed in demonstrating it, and pointing out how the seeds, otherwise nutritious and cheap, can be used with safety. While the large light-coloured seeds (L. sativus weisse) come to this country from the Baltic ports, large quantities of the small dark-coloured seeds (one Liverpool merchant in the Bristol Tramways Company case stated that he had sold 33,950 quarters since July 1890) come to us from India, in the shape of ballast. Analysis shows them to be nutritious, while as regards cheapness Mr. Challenger calculated that by being able to use without fear of evil effects the L. sativus seeds he would save as regards feed in his stud of 800 horses a sum of £300 per annum.

Before passing on to review some of the better known leguminous plants, I would like to make a few remarks concerning *Cicer arietinum*, the chickpea, or common gram, a plant which is erroneously mentioned as having, on being

fed to horses, caused symptoms of poisoning similar to L sativus. Corresponding to some extent in distribution with L. sativus, *Cicer* is well known in Southern Europe, while upwards of 50 names in the vernacular testify to its popularity in India.

It is an annual, varying in height from one to two feet, has several pairs of oval leaflets with toothed edges, and generally a terminal leaflet. The flowers are whitish or rose-coloured, and there are, just as in L. sativus, different varieties of, seeds, some dark-red coloured and some paler. Duthie and Fuller, in their "Field and Garden Crops of India," mention a very large white-grained kind grown as a curiosity. No matter the colour, the seeds are easily distinguished from those of L. sativus, as they simulate, often very successfully, the appearance of a ram's head; hence the specific name of the plant *arietinum* (aries, a ram).

CHICK PEA *(Cicer Arietinum).*

Uses of Cicer arietinum.—(*a*) As food for man: Mixed with wheat and barley in many districts of India, it forms the principal crop of the poorer classes. The seeds are prepared for food in different ways; sometimes ground into meal for cakes and puddings, or, according to Lindley and Moore, used as a substitute for coffee, and again as common in Paris for soups. The roasted seeds may be mixed with sugar and other ingredients, the whole forming a well-known sweetmeat in India; or again, the roasted seeds are carried to be used as a sustaining food on long journeys. The vegetable is known as a medicine in India, although its too frequent use may induce calculi in the bladder in persons predisposed to the disease, owing to the large amount of oxalic acid which is exuded from glandular hairs on leaf and stem. Drury tells

us, in addition, that this exudation is collected by the natives and used in their curries instead of vinegar. According to Moore, "the boots of a person walking through a dewy grain field will be entirely destroyed by the pungency of the acid given out by the leaves."

(*b*) As food for cattle and horses: The plant has considerable use as a fodder for cattle, which is often not very palatable owing to its bitter taste, and Duthie speaks of its being injurious as fodder to milch cows. For horses Watt strongly recommends the importation of the seeds on to Britain, the properties of albuminoids to starch (21 : 59) being much better balanced than in our ordinary horse feeds. He suggests that oats and grain, or Indian corn and grain, would be found to be much more nutritious and strength-giving than the ordinary English diet, "which contains an excessive amount of starch." Without dwelling on this opinion, I think it may be safely stated that any poisoning effects said to follow the use of its seeds as a feed for horses are quite imaginary. I have made a number of inquiries of gentlemen who have had a large experience in India as veterinary surgeons, both military men and civilians, and I find a unanimous testimony to the value of Cicer arietinum as a horse food.

There are two other plants to which the name "gram" is sometimes applied, and which may thus be confused with gram proper, viz., "Phaseolus mungo," or green gram, and Dolichos biflorus, or horse gram. The former, with several varieties varying in habit of plant and colour and size of seed, has a wide cultivation. Its seeds are eaten by rich and poor alike, while the stalks and leaves are given to cattle. Dolichos biflorus, horse gram, found wild and cultivated, is described in Church, where its haulms are said to be a good fodder, but the continued use of its seeds to cause œdematous swellings.

To return to the genus Lathyrus, I want to note four species, three at least of which may be poisonous. L. Clymenum, a species belonging to the Levant region (both Europe and Africa), and also said to be found in Madeira. Its leaflets, 9 to 14 in a leaf, are very much shorter than those of L. sativus, and are blunt at the point. The flowers are in small racemes. There is another species found in Italy, and very closely allied to clymenum, namely, L. alatus—so closely allied that it is sometimes sunk in the last species, and by some authorities is spoken of as synonymous. On the continent there are records of these two being injurious

also. Then there is L. cicera, with flat pods, a native of South Europe and Northern Africa, and known in these regions as a fodder plant. Its seeds, when used in quantities, produce harmful results; *e.g.*, in France there are records of its use by human beings being followed by paralysis, and an epidemic of paralysis in a tribe of Arabs in Algiers, some 12 years ago, was traced by French experts to a similar cause. The brown, smooth seeds of L. cicera can by a casual observer be very easily mistaken for those of the Indian variety of L. sativus; indeed, I know of their having been shown in an Exhibition for several months as those of L. sativus, and without remark.

The last Lathyrus I will mention is *Lathyrus aphaca*, the yellow vetchling cultivated in different parts of India as a fodder plant for cattle, and also found in this country, being not uncommon in the eastern and southern counties of England. The seeds and pods have been known to be used in soup in the young state, and without harm resulting; but the ripe seeds are narcotic, and cause sickness and headache. In this connection one might also notice the haricot bean (Phaseolus vulgaris), whose unripe pods are much in use as a green vegetable, as are also those of the scarlet runner, Phaseolus multiflorus. The ripe seeds have been known to cause illness, and some time ago—in Leith, I think—several persons suffered from partaking of the raw seeds. The bad effects seem to follow only when the seeds are eaten raw, as when cooked no harm has followed.

The Lupins.—None of these are natives of Britain, but several species are well-known in Southern Europe and in some parts of Asia. One of the best known is Lupinus albus, grown for fodder, or the crop may be ploughed in as manure. Its seeds are eaten by man and also by cattle, after steeping and boiling to remove the bitter taste. A bitter principle, probably alkaloidal, seems to be the characteristic of the various species of Lupin, and we have certain knowledge in the case of two, at any rate, viz., L. albus and L. angustifolius. From the seeds of L. albus an alkaloid has been isolated, identical with an alkaloid from the seeds of Lupinus angustifolius.

The alkaloid is called Lupanine. Bitter to the taste it is said not to be hurtful to man, but it has been shown experimentally to be poisonous to frogs.

Sarothamnus scoparius. Broom.—This plant, well-known in the Pharmacopœia as diuretic and cathartic, has had isolated from it a volatile liquid alkaloid called Spartene,

which is said to have narcotic properties. One writer speaks of sheep eating the broom pods and suffering from a kind of intoxication, and mentions, too, an old use of the broom tops in Wales as communicating a bitter flavour to beer. But we need not go so far afield, for those who know their Allan Ramsay will remember his elegy on Maggy of Johnstoun. Last century this Maggy Johnstoun kept an inn near Edinburgh, which was a favourite resort on account of a particular kind of clear and intoxicating ale sold there. Ramsay, who knew the place well, recalling his experiences, and singing Maggy's praises :—

> Some say it was the pith of broom,
> That she stow'd in her masking loom,
> Which in our heads raised sic a soom ;
> Or some wild seed,
> Which aft the chaping-stoup did toom,
> But filled our head.

In conclusion, I would refer to two well-known plants, Ulex Europœus, Gorse or Whin, and Cystisus laburnum. Gerard has isolated from the seeds of the Whin, an alkaloid *Ulexine* (the bark and the young tops also contain it, but in less quantity). The physiological action of Ulexine is interesting as it may afford the key to the L. sativus poisons, and therefore I give a few details of experiments made by Dr. Bradford, and reported in the *Journal of Physiology*. A very minute quantity of the alkaloid was injected into the dorsal lymph space of the frog, and in five minutes respiratory movements had ceased. There was complete paralysis of all voluntary movement. The muscles on being stimulated with electricity directly responded, but the strongest currents applied to the sciatic nerve failed to produce any contraction of leg muscles. The alkaloid was thus shown to be a nerve poison, and administered in larger doses proved a muscle poison as well. Further experiments with such mammals as dogs and cats again showed this Ulexine to be a powerful respiratory poison, *e.g.*, three mgrs. to a chloroformed cat killed the cat with convulsions in three minutes. The cat could be kept alive as long as artificial respiration was kept up.

It is now admitted without dispute that this Ulexine is identical with the alkaloid *Cytisine* that has been isolated from laburnum seeds, and which has been detected as present in cases of poisoning by Cytisus laburnum. As in the Gorse this alkaloid is not confined to the seeds, but its presence has been demonstrated in the bark, leaves, and flowers, and in this connection it is interesting to find record of a case of

poisoning of a family of seven persons who had eaten the flowers of the laburnum in mistake for those of the locust tree, another leguminous tree. The effects of eating the laburnum flowers were giddiness, accelerated respiration, and vomiting. No asphyxia showed itself and the patients soon recovered. Cases of laburnum poisoning are not uncommon among children, and cattle and pigs have been known to suffer after browsing on it. I may add a very curious case of narcotic poisoning due to eating laburnum roots. Fifty-eight boys in an industrial school chewed the roots of an old laburnum tree cut the day before, mistaking it for "liquorice-stick." Soon many showed the symptoms of narcotic poisoning, viz., sleepiness, stupor, and staggering about. On emetics being given, even while in the act of vomiting and holding the basins in their hands, some dropped off to sleep, as did others on their feet while being walked up and down. It was found that in the worst cases no more than half an ounce could have been chewed. The day after all had recovered.

As to the illustration of L. sativus I have thought it better to copy the figure given in Church's "Food Grains of India," rather than photographs of the plants grown at the Botanic Garden, as these, owing to the conditions in which they were reared, are possibly a little "drawn." The photograph of Cicer arietinum is also from Church.

I have to thank Professor Balfour for facilities offered me in obtaining access to Watt's Herbarium of Indian plants, and also Professor Wallace for his kindness in throwing open to me his very complete collection of the seeds of Indian fodder plants.

BANDAGING THE FRONT OF THE KNEE-JOINT OF THE HORSE.

BY VETERINARY-CAPTAIN BLENKINSOP, A.V.D., ROYAL HORSE INFIRMARY, WOOLWICH.

PROBABLY in veterinary practice no class of wounds requires more careful scientific treatment than lacerated and continued wounds to the front of the knee-joint of the horse. In order to secure such wounds healing without the risk of large unsightly cicatrices, with, in many instances, thick indurated edges, it is necessary to take every precaution to keep them as far as possible in an aseptic condition. This has been urged upon the profession during the past year in the current veterinary literature, and several articles have been written

by different French veterinary surgeons, both with regard to the treatment of such wounds and methods for removing the blemishes which may result from their improper treatment.

All the writers insist on carefully covering the wounds with antiseptic dressings, but differ in their opinions as to the best means of securing such dressings to the joint in question. Some recommend fixing the joints with splints, others suggest plaster bandages for this purpose, while others merely use a modification of the figure-of-eight roller bandage.

All these suggestions are, in the writer's opinion, open to certain objections. Splints are not easily obtained in ordinary practice, and, unless made to fit individual horses, are not usually satisfactory. The application of plaster bandages is only successful after operations performed with the strictest aseptic precautions, which can, as a rule, only be carried out in properly equipped hospitals with trained assistants.

The modified figure-of-eight bandage recommended in the *Bulletin de la Société Centrale de Medicine Veterinaire* of the 30th November, 1894, by M. Waldteufel, is that generally used by English veterinary surgeons, and has been known in this country for many years. It is certainly a good method of fixing dressings to the front of the knee-joint, but as usually applied has the following disadvantages :—The bandage is liable to slip unless drawn tightly, when it may check circulation, and if special precautions are not taken, it will gall the back of the limb. To prevent this galling, M. Waldteufel recommends that a layer of moss wool or tow be placed over the limb, under the bandage. This is not easy to adjust, does not altogether prevent the bandage slipping, and necessitates a very long bandage being used.

The following simple method of bandaging in cases of injuries to the front of the knee-joint is now suggested. It has been tried on a considerable number of cases in the writer's practice during the past year and has always proved satisfactory. A pad nine inches square and about one inch thick with a round hole in its centre about 1½ inches in diameter, is made of coarse linen stuffed with cotton wool or oakum. Through this pad a number of stitches are sewn to fix the stuffing.

After the wound has been carefully cleansed by irrigation with some warm antiseptic solution, and the necessary dressings applied, the pad is placed over the back of the knee, with the central hole over the prominence of the pisiform bone, and is kept in position by a 2½ inch roller bandage four yards long. This roller is applied as follows :—Two circular turns

are taken round the lower extremity of the forearm over the upper edge of the pad from within outwards across the front of the limb; this fixes the bandage, which is now brought obliquely downwards over the front of the joint to the outside of the superior extremity of the cannon bone, where two circular turns are taken round the limb, over the lower edge of the pad. The bandage is then brought obliquely upwards from the inner side of the cannon to the outside of the fore-arm, and continued as a simple figure-of-eight bandage, until the whole of the front of the joint is covered, while the circular hole in the pad remains uncovered. The end of the bandage should be finally secured by a few stitches in preference to pins or tapes. The bandage should always rest on the pad at the back of the limb, and if properly applied no reverses will be necessary to make it lie evenly. Of course it is taken for granted that a proper surgical bandage is used and not one with hemmed edges or with a selvedge on one edge.

This method has the following advantages over those previously reported :—

1. It does not slip.
2. It has never been found to gall.
3. The pad is easily and quickly made, and, consequently, can always be replaced when soiled.
4. It is inexpensive.

NOTES ON THE CLINICAL HISTORY OF GASTRIC AND INTESTINAL AFFECTIONS IN THE HORSE.

BY E. WALLIS HOARE, F.R.C.V.S., CORK.

(Continued from page 18.)

(5.) *Acute Gastritis, with Rupture of the Stomach.*

Date.—August 15th, 1894.

Subject.—An aged mule.

History of Case.—On returning from work the previous evening, the animal appeared dull and refused its feed. Shortly afterwards she was seized with acute abdominal pain and continued in this condition all night. On my attendance being requested at 10 a.m. on August 15th, I found the animal lying in a corner of the shed, with the head turned towards the left side; the mouth was open and contained a small amount of unmasticated hay; the abdomen was greatly distended and tympanitic, the surface of the body cold, the pulse almost imperceptible, respirations quick and shallow. I was informed that there had been temporary ease from the pain for about an hour. The animal made feeble attempts to

vomit, but no egesta appeared, and she died quickly after a few convulsive struggles.

Post-Mortem Examination.—Performed immediately after death. On opening the abdominal cavity, the gastric contents, consisting of a large amount of oats mixed with potatoes, were found scattered throughout the peritoneum. The stomach was empty and showed an extensive rupture through its greater curvature, the edges of the rent in its walls being dark-coloured. The villous mucous membrane throughout was acutely inflamed and thickened.

(6.) *Gastric Impaction, with Rupture of the Stomach.*

Date.—December 10th, 1894.

Subject.—A van-mare 8 years old.

History of Case.—Was recently purchased and appeared healthy. Was sent to work as usual at 8.30 a.m., but after going a mile appeared sick and made attempts to throw herself down. On being brought back to the stable she showed symptoms of acute abdominal pain, with tympanitic distension. The ordinary colic draught was administered without any effect, and in addition a dose consisting of ol. tereb. 2 ozs., spts. ammon. aromat. 4 ozs., ol. lini. 1½ pints. This was taken badly, and an enema administered was quickly returned. On my attendance at 1 p.m. I found the animal lying down and in great distress, with enormous tympanitic distension of the abdomen, the pulse was weak, quick and rather wiry in character, and the respirations greatly accelerated. There was profuse sweating all over the body, but especially on the region of the left flank, the pain was continuous but not violent. I learned that while in the act of lying down, she had sat on the haunches for a minute. I immediately inserted the trocar and canula in the right flank, and a large amount of gas escaped, but it quickly gave evidences of reappearing, so I administered creolin 1½ ozs. in 1½ pints of warm water by means of Toope's trocar and canula. There was an anxious expression of countenance, the pulse was rapidly assuming a "running down" tendency and the abdominal distension was quickly returning, the animal maintaining the standing position. I ordered a pint of whisky as a diffusible stimulant, but it was administered with great difficulty. The animal made feeble attempts to vomit, but no egesta appeared, the mouth was open and the head depressed. She made a sudden stagger forwards and fell, biting the ground, and died quickly at 2 p.m. after a few convulsive struggles.

Post-Mortem Examination, Dec. 11th.—Abdomen enormously distended, and extensive serous effusion on both flanks. Carcase very fat all over. On opening the abdominal cavity, a large amount of the gastric contents were found surrounding the stomach. This organ was ruptured through the greater curvature, and in one portion of the viscus, portion of the food, consisting of hay and oats in a dry condition, was found firmly impacted. The villous mucous membrane was congested. The bulk of ingesta, when placed together, was very large. The small intestines were empty, but normal, and the large division showed the usual amount of ingesta. The liver was greatly reduced in size, very pale in colour, and friable, giving the appearance as if boiled to excess.

Remarks.—Rupture of the stomach is not always evidenced by characteristic symptoms. In the last case the animal was prevented from rolling about by the attendants, so that this factor is not essential to the occurrence of this fatal lesion. At the commencement of this case, the only symptoms presented were those of a severe attack of flatulent colic, until the character of the pulse and the general constitutional disturbance pointed to a very serious condition. On looking up medical literature on the subject of perforation of the stomach as the result of gastric ulcer, I find that the symptoms resemble, to a certain extent, those occurring in the horse as the result of rupture of this organ. In both there is at first violent pain, attended by vomition, but in the case of the human being the latter occurs earlier. This is followed by an apparent ease from the acute pain, and a condition termed *Lipothymia*, a term indicating a marked failure of the vital functions, viz., those of circulation, respiration, and body heat. In the *British Medical Journal* of November 4th, 1892, there is an excellent paper by Dr. S. Gee, which includes a description of the clinical history of perforation of the gastric walls. This is interesting to veterinarians from a comparative point of view.

(7.) *Meningitis, accompanied with Gastritis.*

Date.—Dec. 13th, 1894.

Subject.—An aged bay gelding.

History of Case.—Always healthy. On returning from exercise about 5 p.m., the animal appeared sleepy and inclined to stumble while walking; on entering the stall, he endeavoured to rest himself against the walls, and showed a tendency to push his head against any object within reach. After a short time he went down and commenced to struggle

violently with both fore and hind limbs, and sweated profusely. He continued in this condition through the night, having received opiates without any effect.

Next morning, at 9 a.m., I saw the animal, and found him in great distress, fighting convulsively with both fore and hind limbs; there were short periods of ease, but without any warning the struggling would commence, the movements being always in the same direction; there was profuse sweating all over the body, the eyes had a wild appearance, the pupils were dilated, and the eye-balls were moved from side to side in a quick, convulsive manner. He was unable to rise, and, after some difficulty, the catheter was passed, and a large amount of pale-coloured urine was withdrawn. Chloroform was administered with a view to give some ease from the violent convulsions. When fully under the anæsthetic, with the eyes insensible to the touch, there were still short spasmodic movements of both hind legs. He gradually became weaker, and death was a happy release to his sufferings.

Post-Mortem Examination, Dec. 15th.—The stomach contained a moderate amount of ingesta. The villous mucous membrane was acutely inflamed and thickened. The small intestines were slightly congested in patches, large intestines normal. On examining the brain, I found the meninges acutely inflamed, opaque and thickened, the minutest vessels were deeply injected. On examining the cervical portion of the spinal cord, the meninges were also acutely inflamed. Pressure of time prevented me from examining the entire spinal cord.

Remarks.—I reported a similar case to the above, in the *Veterinarian*, in the early part of last year.

In that case violent symptoms at first were present, the animal rushing madly about the stall, with occasional tetanic seizures of the muscles of the head and neck, and after the standing position became impossible similar symptoms to the present case were manifested.

The *post-mortem* appearances were also similar.

The present case is interesting with reference to the action of chloroform, the effects of the irritation of the spinal centres still persisting when the functions of the cerebrum have been removed by the action of the anæsthetic. Does not this explain, to a certain extent, the involuntary movements sometimes observed when operating on a horse placed under the influence of an anæsthetic? I have frequently observed when operating under chloroform, an involuntary movement to take

place, even when anæsthesia was sufficiently complete; this is no indication for a further administration of the drug, and the serious results recorded sometimes from the effects of chloroform are chiefly due to pushing the administration under these circumstances.

No. 8.

Date.—September 1st, 1894.

Subject.—A light harness mare, five years old.

Previous History.—Had always been a delicate feeder, and at present has been doing very little work.

History of Case.—Refused food this morning, and at 10 a.m. showed signs of abdominal pain, was prevented by the attendant from rolling, he administered a pint of ol. lini., also ale and ginger, without any effect. My attendance was requested by telegram, but as the distance was 12 miles from town, I could not attend until 4.30 p.m.

I found on arrival that the animal had been kept walking about, but would lie down and roll violently if allowed. The pain was continuous, pulse quick and rather wiry in character. Temperature 101°, respirations accelerated, visible mucous membranes injected, the ears were drooping and the animal showed a depressed appearance of countenance, abdomen tender to the touch. There were frequent intestinal murmurs, and I ascertained that there had been frequent passage of fæces during the day, but no urine. I administered 1½ ozs. chlorodyne, which I happened to have with me, as not being informed of the nature of the case, I omitted to bring the medicine case. This dose gave temporary relief, the animal lay at full length, occasionally groaning and turning the head towards the right side. At 5.30 p.m. the pain returned, the animal rolled violently, then stretched at full length, groaning deeply, kept from rolling, and obtained from the chemist the following:—

Take Morphinæ Hydrochlor., gr. x.
Chloral Hydras, 1 ounce.
Mucilago Acaciæ, q.s.
Aqua, 1 pint.
Fm.

This was administered, and after 20 minutes the patient became quieter, lay down, and appeared in a sleepy condition. Fearing a recurrence of the pain, as the pulse and general appearance pointed to a serious condition, I wired to town for the assistant to bring a supply of cannabis indica, etc.

At 6.30 p.m., the symptoms of pain were returning, so a similar dose of morphine and chloral was administered. An enema was also given, and the catheter passed, but only a small amount of thick dark yellow urine was drawn off, during which process the patient strained violently.

At 8 p.m. the animal appeared quiet, but strained occasionally as if trying to urinate. Gave spts. æth. nit. 2 ozs., aqua, 1 pint. Left instructions if the pain reappeared to repeat the dose of morphine and chloral. Allowed no food except sloppy bran mashes, and put on muzzle to prevent the 1 being eaten.

September 2nd.—Visited patient at 10 a.m., found that there had been no recurrence of the pain, but no fæces or urine had been passed. Attendant stated that the animal had strained occasionally as if to urinate. Prescribed small doses of potass. acet. Take digitalis, and spts. æth. nit., three times a day, kept on bran mashes and oatmeal gruel, ordered walking exercise.

September 3rd.—Visited at 4.30 p.m., found patient looking quite well, fæces and urine passed in normal amount, ordered careful feeding and exercise.

September 4th.—Reported fit for work.

Remarks.—I did not venture upon a diagnosis in this case, the constitutional symptoms and the continuous character of the pain pointed to a serious condition. The symptoms pointing to some disorder of the urinary system I do not pretend to explain, but the diuretic treatment certainly gave marked relief. The combination of morphine with chloral hydrate is one which, as the result of experience in its use, I can confidently recommend. It is especially useful in those instances where morphine induces cerebro-spinal excitation, as the latter action is overcome by the hypnotic effect of the chloral.

No. 9.

Date.—August 31st, 1894.

Subject.—A grey cart-gelding, 6 years old.

Previous History.—Has been in present owner's possession only a short time.

History of Case.—Had been at work all the morning. On coming in at 2 p.m., got a drink of cold water, refused feed, and in a short time afterwards showed slight pain, which gradually increased. The urine was passed in small quantities. On being brought for treatment at 4 p.m., the animal showed symptoms of slow abdominal pain, and made

frequent attempts to lie down. The pulse was quick and full, respirations accelerated, temperature 101°, extremities cold, and the animal was sweating profusely all over the body, the abdomen was tense and painful to the touch. Gave chlorodyne 2 ozs., spts. æth. nit. 2 ozs., ol. lini. 1½ pints. Passed catheter and drew off a small amount of light-coloured urine, also administered enema, which was quickly returned.

On reaching the stall he lay down carefully and groaned frequently, the profuse sweating still continuing, had him well covered over with clothing and straw. At 4.30 p.m. symptoms of violent pain appeared, the animal making attempts to lie on his back. Gave ext. cannabis indica, ½ oz. in bolus. In about 20 minutes the pain disappeared, and at 5 p.m. he appeared very sleepy, the eye-lids being half closed, and he was snoring deeply. He lay at full length, getting up quietly a few times. The sweating had disappeared and the surface of the body was warmer. At 9.30 p.m. slight signs of pain again appeared, and another dose of cannabis indica ext. ½ oz. was given in bolus. After a short time the animal lay down and slept all night. At 10 a.m. next day he was in a state of profound narcosis, he stood persistently, the eyes were closed, the head drooping, a quantity of frothy material issued from both mouth and nostrils, the pulse was quick and weak, respirations slightly stertorous in character, there was difficulty in progression, with weakness and apparent loss of power in the posterior extremities, the appearance was dull and listless, the penis was pendulous. He places his mouth in a bucket of bran mash, but holds the food in the mouth and makes no attempt to swallow. The body surface was cold, and if the animal was made to move, he staggered about. Fæces and urine had been passed during the night. Gave 1 pint of whisky and 2 ozs. of spts. æth. nit., which was administered with difficulty. Prescribed 2 ozs. of spts. æth. nit. every four hours, and kept on soft food.

September 2nd.—Horse still sleepy in appearance, and moves the hind quarters in a stiff manner during progression. Bowels and kidneys acting well.

September 3rd.—Horse greatly improved, has a slight cough, still slightly sleepy, feeds well; sent to exercise.

September 4th.—Horse convalescent.

Remarks.—The above case shows the physiological action of cannabis indica. The second dose might have been smaller or omitted altogether with benefit. As an hypnotic and anodyne, this drug is a very valuable medicinal agent,

but the difficulty with regard to it is that it is difficult to approximate the proper dose so as to avoid excessive after effects. Whether some horses possess an individual idiosyncrasy to its action, or whether the strength of the drug varies, is a point on which I am not clear. I have frequently observed that large doses of it may be tolerated without producing the effects described above, while in certain cases even moderate amounts will cause a decided narcotic action.

However, although apparent alarming symptoms may be produced by its action, clinical experience of its use demonstrates that these are by no means serious, and it certainly is far preferable to see the subject of acute pain in a state of narcosis, than to see him going round his stall, as a result of the exhibition of large doses of opium or morphine. Moreover, cannabis indica has no astringent effect on the intestines, nor does it interfere with the urinary excretion.

PATHOLOGY OF ROARING.

BY A. J. HASLAM, M.D., C.M., F.R.C.V.S., ARMY VETERINARY DEPARTMENT, NEWBRIDGE.

I BELIEVE to the distinguished English veterinarian, Thomas Greaves, Esq., F.R.C.V.S., belongs the credit of being the first in Great Britain who placed on record, from *actual observation*, the frequency of a difference of size of the laryngeal nerves in roaring of the horse (VETERINARY JOURNAL, January, 1889). As stated by him, the fact appears to have escaped anatomists and others. In the VETERINARY JOURNAL, July, 1893, I published several instances (one in detail) of this condition, but I am unable to corroborate Greaves' statement as to the occasional *absence* of the left nerve, in any part of its course. Trasbot, in France, has noticed a lesser size of the left recurrent, as a *result of pressure* of enlarged lymphatic glands.

In my communication I made an appeal for the dissection of the left nerve in cases of roarers, and as this appeal has, so far, not been responded to, I submit some further facts gathered by myself. I am able to enlarge our knowledge, but only to find we are still in comparative ignorance of the disease under consideration.

First: Two horses, in which neither roaring nor grunting were noticed during life, and in which I am disposed to believe the wind was normal, but must qualify any conclusion by stating that neither had been examined by a veterinary surgeon within two years of their deaths. The one—an

animal *well-known* in a cavalry regiment—an Irish gelding, aged seven, in good fat condition. The right crico-arytenoideus posticus was bigger, firmer, plumper, and redder than the left, but which latter did not show any white tendinous bands due to atrophy of muscle. The right recurrent nerve was thicker than the left for the length of the neck. No *further* examination made, either of other muscles or remaining portion of nerves. Animal died of ruptured intestines.

The other case, an Irish mare, aged 10, in good condition, and used for light draught purposes, owned by an *intelligent* farmer who knew what roaring was, and who states that she never made any noise except squealing, and that she was an inveterate kicker; she was destroyed for vice. The crico-arytenoideus posticus of left side atrophied to extent of showing the white glistening bands consequent upon partial wasting of the muscle. Right muscle perfectly normal. The left recurrent nerve smaller than right, which was pinched and flattened into a ribbon-like expansion for about half-an-inch or more, owing to being *jammed* between the eighteenth ring of trachea and the left brachial artery about five inches from anterior border of first rib, *i.e.*, the eighteenth ring, counting forwards, from the bifurcation of the trachea. One could see between the separated and atrophied nerve bundles, so much was the nerve compressed. As interesting to anatomists, I may mention that in this animal there were 61 tracheal rings—not "40 to 50," as stated in one text-book. The brachial artery was carefully examined for atheroma, etc.—it was quite normal and elastic. Posterior to this expansion the left nerve was a little thicker than in front of it, but not as thick as the right nerve in any part of its course. Nerve preserved in Müller's fluid, to be reported on. From these two cases, the *probable* conclusion is that much atrophy of nerve and muscle can exist without roaring. The evidence is not *absolute*, because the horses were not professionally examined immediately prior to death, but I think it is *reasonable* evidence. Was the flattening due to pressure or to stretching? Whatever the cause of the expansion of the nerve over the ring, the question arises—How much atrophy can exist without roaring? Was this (the farmer's) case merely a matter of time, as to when symptoms would have shown themselves? Was the nerve in an abnormal position? Text-books do not give the very minute information required to decide the point; perhaps a quarter of an inch variation might have given the necessary relief from pressure or stretching. The mare was ten years of age and not doing

fast work; if *stretching* had been the cause, it ought to have brought about roaring, one might conjecture; and the same argument would apply to *pressure*. If there had been anatomical variation, and such peculiarity had been transmitted, surely a clear predisposition to roaring. Moreover, I would, *en passant*, add that I have made autopsies of roarers in which there was less atrophy of the crico-arytenoideus posticus than in this latter case.

Now for a case of grunting without roaring—an Irish mare, aged nine, in first-class condition, an inveterate grunter, known for four years. A favourite show animal, being very willing and clever and chosen for all equitation competitions in the regiment. Ridden by a farrier for two years. She never roared, but in stable, and outside, whenever moved or startled, or rider's legs closed on her, she gave the well-known sound.

Autopsy.—The right crico-arytenoideus posticus particularly plump, red, and firm, especially plump over inferior third of posterior part of cricoid cartilage. The left muscle showed the white glistening tendinous bands owing to wasting of muscle. Other muscles not examined. The left nerve about one-third less than the right in thickness, traced from larynx to branching from vagus, but *no place of pressure* was found, and there was no flattening. The smaller size of left nerve kept up all the way, but the right nerve was only actually compared with it for the length of the neck. Here we have a condition, as far as it goes, similar to that found in roaring. Moreover, the left nerve was not as small, and the atrophy of the left crico-arytenoideus posticus was not as great as in the mare just cited (the farmer's case), which was distinctly the larger animal.

We may, at any rate, so far corroborate the *clinical fact* so well recognised that roaring and grunting are allied; whether their difference is merely one of degree, remains to be proved.

A Case of roaring—An Irish mare, 12 years old, good condition. Reported to have roared distinctly at gallop and fast trot, but not at a slow trot, for two years. Has not become worse or better. Died of enteritis. *Autopsy.*—Crico-arytenoideus posticus of left side much atrophied, showing white tendinous bands. Right muscle healthy. Left arytenoideus, left thyro-arytenoideus, and left lateral crico-arytenoid, were all atrophied and pale as compared to right muscles. Even the left crico-thyroid seemed a trifle less than the right crico-thyroid, not nearly the difference between the other right and left muscles, probably the result of partial disuse of left side.

and not interference of trophic or motor influence. The left and right recurrents traced from larynx to vagus, the former was one-third less than the latter in thickness. At *no place was there any pressure* on left nerve, and certainly no flattening nor expansion. At the very entrance of chest where applied to inferior surface of trachea there appeared rather little areolar tissue, but I did not think it abnormal, the common carotid being directly under the nerve. The right nerve maintained its relative thickness throughout its course (entire left nerve preserved). In the neck with both the right and left nerves, there were tracheal nerves closely bound up with the recurrents to about eight inches from entrance of chest, and which had to be carefully separated.

If I had to make a comparison between the amount of atrophy of left crico-arytenoideus posticus of this roarer, and that of the *same* muscle of the non-roarer (farmer's case), I would say they were exactly alike, but that in the farmer's case the left nerve was not so thick as in this roarer.

However, here we have a grunter and a roarer in which no seat of pressure on nerve was found, and yet a difference in size of right and left nerves; and in one of the non-roarers there was a difference of size of nerves with a place of pressure, while in the other non-roarer there was a difference of size of nerves, but whether with or without a place of pressure was not made out. I have placed on record other cases of roaring, in which there was a seat of pressure, and a difference of size of nerves. It must be noted that these ribbon-like expansions were not the plexiform arrangements seen occasionally in most animals. They were definitely associated with a tracheal ring, and there was no anastomosis or branching at these parts. According to Fleming, Sussdorf places on record a "*flattening perceptible by means of the microscope where the nerve passes between aorta aud trachea*," and is presumably considered as a physiological phenomenon, not associated with atrophy of nerve or muscle, nor with roaring. Sussdorf terms it *microscopic*. The *flattening* I refer to can be seen and felt by even men who work in the forge. One must make allowance for errors of observation, but these are the suggestive facts I venture to make public. It behoves us to examine the larynx all over, the laryngeal nerves of both roarers and undoubted non roarers, to trace both nerves to the vagi, and to preserve nerves, and even vagi and medulla! As soon as my material is more or less complete, I will issue a microscopical account of these changes now reported.

I venture to think a central cause is suggested by some of the above facts, as in the roaring of Lathyrus sativus; or can our patients be the subjects of a peripheral neuritis, allied to that of plumbism in man? but here, in lead poisoning, we really possess no reliable information of the condition of the nerve centres.

The pressure theory, to my mind, will not altogether account for even every one of the few cases of laryngismus paral. I have carefully dissected.

In a case due to pressure alone, one would expect a gradual increase of the roaring, as, indeed, is often the case; but there are cases of fairly sudden origin. Is it possible such cases attributed to exhaustion consequent upon thermic fever, life on board ship, change of climate, heated stables, etc., are due to a morbid condition of the central nucleus of the laryngeal nerves? But why the left side? Why does roaring relatively oftener follow strangles than pneumonia? I doubt the statement that when roaring follows strangles the latter is generally of the irregular variety, and so likely to produce pressure on left nerve in the chest; nor does the thickened membrane theory of strangles explain the subsequent left paralysis. If roaring is due to the debilitating effects of disease, we still require to know the *modus operandi*, so as to end in left laryngeal paralysis.

Bearing upon this nerve atrophy are the operative attempts for the relief of roaring by nerve union. If a nerve has lost the power of conveying impulse, it follows that only after new fibrils from the fresh nerve supply have grown to the muscles, could junction take place. I venture to think, however, that so long as the partially-atrophied left laryngeal nerve communicates with its intact trophic centre, re-establishment of nerve junction can take place very shortly after a new trophic centre is brought about by operation. In regard to muscle, possibly another argument applies with reference to the period after loss of junction, it can recover. These matters are obviously a matter of a needful investigation. How are we to explain those roarers which for a time make more noise at rest after trotting than while actually travelling? I have seen two such. The distinguished Irish veterinarian, Mr. J. Allen, F.R.C.V.S., Dublin, relates an instance of an animal he himself tried severely, without a sign of whistling. Directly he stopped or slackened pace, whistling began, and so every time he was tried. Sound breathing when extended, whistling at rest. It might be conjectured that here we have paresis and want of co-ordinative control. While attention

was fixed on speed, the proper respiratory reflexes were set up, and that the difficulty of respiration at rest (indicated by noise) was not sufficient to excite them.

I venture to state my opinion that the reasons yet assigned for roaring are insufficient for some cases. We have much to learn. This subject of roaring is, I think, one of the most interesting in surgery and pathology. Everyone can help to elucidate the problems involved, by making and recording their observations in detail, before and after death, of both roarers and non-roarers. Nothing but a microscopic and experimental research can complete the subject. I have begun the work, and only desire to go on with it.

P.S.—Since writing the above, on making an autopsy of an Irish mare, aged four, in prime condition, a remount of the 3rd Hussars, dead of volvulus, I find a smaller left recurrent and paler, smaller and less firm left crico-arytenoid postic than on the right side. These were noticed by Lieut. W. F. Shore, A.V.D., quite independently of any suggestion on my part. In this case the muscle was not sufficiently wasted to show an abnormal amount of fibrous tissue. I traced both nerves to origin, but no seat of pressure or expansion was found, their relative difference being kept up. This mare had only joined the regiment last September, and since then had stood in sick lines for a sprained hock. While there she caught strangles, which was cured in ten days. She was slightly off feed with a little fever about a fortnight afterwards, for a week. Since joining the regiment, then, she was *never out of a walk*. This mare was, presumably, quite sound in wind when joining, having been examined by the remount veterinary officer. The reasonable presumption is that she was still a non-roarer. From what has been previously said, nothing more suggestive than this case could be wished for.

DISLOCATION OF THE KIDNEY.

BY JAS. MCPHAIL, VETERINARY STUDENT, NEW VETERINARY COLLEGE, EDINBURGH.

A GREY cart horse, the property of Messrs. Mutter, Howey & Co., carters of this city, slipped and fell on the frozen snow while drawing a lurry on January 7th. As he was unable to rise, he was brought in a float to the College Infirmary. He was made comfortable on a good bed of straw, and during the night succeeded in rising. The bowels and the kidneys acted fairly well, mashes and hay were eaten freely, and the little pain that was evinced was easily relieved by an

anodyne draught. On the morning of the fourth day after admission, the animal was found down and could not be got up, and was found on examination to be dying.

At a *post-mortem* examination made the same day, the following lesions were disclosed:—The left kidney was torn from its attachment and lay free in the abdominal cavity. One of the ribs was broken and had pierced the lung, tearing off a large piece of the pleura and extensively damaging the lung substance.

VOMITING IN THE COW.

BY JAS. McPHAIL, VETERINARY STUDENT, NEW VETERINARY COLLEGE, EDINBURGH.

A COW, the property of Mr. Lindsay, dairyman, Annundale Lane, was seen on December 15th, 1894. The animal was extremely tympanitic, and the symptoms being very urgent the rumen was punctured forthwith and a large quantity of gas escaped; but the flank did not collapse in the marked manner usual in cases of pure tympany. There was evidently a large quantity of ingesta present.

The more urgent symptoms being relieved, an opportunity was afforded to look round the animal. To my astonishment she appeared to be chewing the cud, and in front of her lay three or four buckets-full of what looked like a bran mash—it was really brewers' grains, which had been swallowed and returned again; one could hardly say ejected, the action was not what one associates with vomiting; there was no force, no apparent contraction of the abdominal muscles or spasm of any kind: the cow simply kept up a sort of churning motion with her jaws, and the "stuff" rolled out into the trough in front of her, much in the same way as mince rolls out of a sausage machine. The proprietor stated that this had been going on for a couple of hours. The treatment consisted in the administration of a few doses of sulphite of soda, followed by carbonate of ammonia and afterwards by a strong aperient of Epsom salts, which put matters right, though the animal was not herself again for a fortnight. Doubtless a fermentative process was going on in the rumen, and the evolved gases hurried the contents into the œsophagus to be brought into the mouth as in rumination.

PARALYSIS OF BLADDER, RECTUM, AND TAIL.

BY WALTER PERRYMAN, M.R.C.V.S.

THE subjoined are notes of a peculiar case recently under my charge, the like of which I have failed to find in any of the

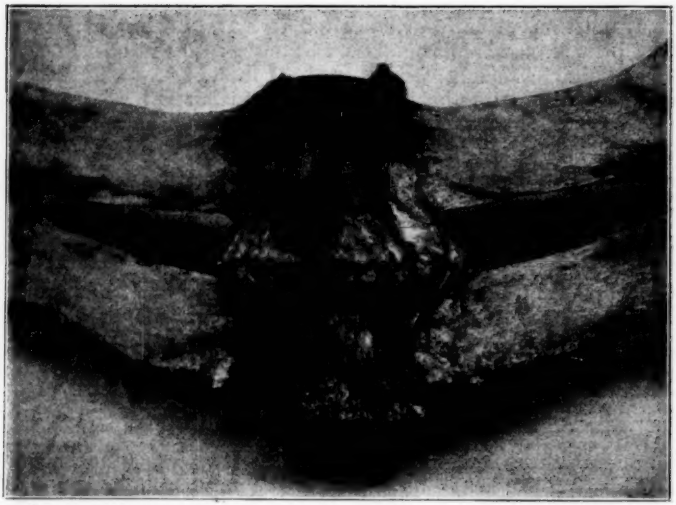
text-books I have searched, and I cannot call to mind having seen any recorded in our periodicals. I had not met any member who had had a similar case until recently, then a friend told me he had seen two. I asked the nature of the pathological conditions, but was simply told "it was nervous." I determined, if possible, to fully investigate my case, should a *post-mortem* be available. Opportunity arrived, when, after a careful search, I was able to locate the seat of the disturbance. The facts are as follows:—

Subject.—Brown gelding, age seven years off, the property of Messrs. Simpkin, Marshall and Co., publishers, Strand. The animal had been in their possession since last March, and, until my attention was called to him, nothing whatever had been noticed amiss. About October 10th I was requested to see him, as he appeared unwell. I found him dull, listless, and not feeding; pulse and temperature normal. My attention was directed to the true cause of the trouble by seeing an enormous mass of fæces behind the animal. I explored per rectum, and found the bowel dilated to several times its normal condition, and packed with fæces, which I removed. The animal was unable to micturate, but evinced a desire to do so whenever the bladder became full by pawing and stretching himself out, although unable to draw the penis. The tail could not be moved voluntarily, and was quite insensitive to pain, motor and sensory paralysis being well marked.

The treatment adopted consisted of—ol. lini., mag. sulp., tinct. nucis. vomic., combined with alcoholic stimulants. Hot flannels, flat-ironing, and stimulating liniments to the spine. Soap and water enemas two and three times daily. The bowel frequently emptied, likewise the catheter passed and urine withdrawn, the latter, as a rule, being highly coloured and very offensive in odour, the last portion drawn being greatly charged with mucus and occasionally tinged with blood. After three weeks' treatment the patient appeared as at first. Prognosis unfavourable, there being, probably, pressure on the nerves at their origin.

I was asked to consult with another veterinary surgeon as the cob was one of the best in the stud, and every chance should be given him. Accordingly I met Mr. A. E. Gostling on two ocasions; the result of our consultation was to smartly blister the back as far as the root of the tail. Nervine tonics, enemas, etc., continued, and per rectum inj. physostig. administered twice daily in 20 m. doses. To this the animal responded in the course of three or four days by being able

to pass small quantities of urine, and slightly drawing the penis; he was never able to empty the bladder, as could be ascertained per rectum, and it was necessary to withdraw the remaining urine by means of the catheter, as the bladder showed increasing signs of inflammation, no doubt brought on by the acrid condition of the urine. Apparently little inconvenience was felt, except at such times when the two organs were very much distended, then the cob would stand with back arched and occasionally kick at the flank; at such times after the bowel had been emptied, invariably from one

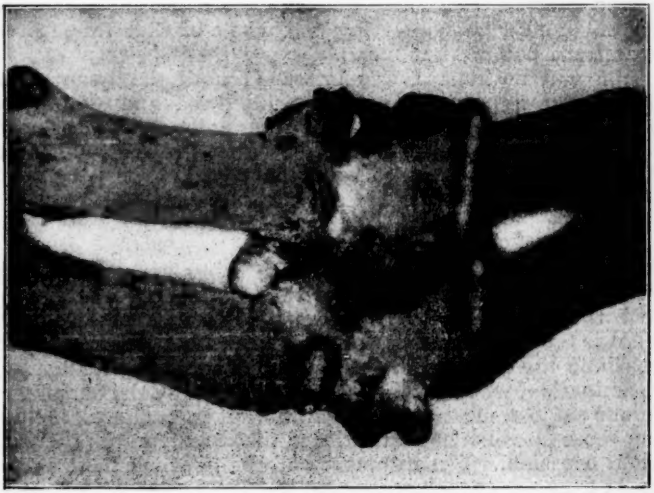


THIRD AND FOURTH LUMBAR VERTEBRÆ IN CASE REFERRED TO ABOVE.

to three pints of urine would be passed voluntarily. When out at exercise, a lively disposition was exhibited. During the whole time treatment was carried on, the appetite was good, carrots and mashes being eaten freely in addition to dry food. The peristaltic action of the other bowels could be heard most distinctly as well as felt, when the arm was in the rectum.

November 28th.—The animal was slaughtered; I then made a careful *post-mortem*. The bladder was inflamed and thickened; this I attribute as a secondary action. Kidneys normal, as were all the other organs. After the carcase was

stripped, I managed to secure the posterior half of the spinal cord and its coverings, the latter in the lumbar region for some, three or four inches was congested directly opposite to an enlargement on the bodies of the lumbar vertebræ. The bones were boiled, and then to my satisfaction I found two of the lumbar bones (third and fourth) firmly anchylosed. No portion of the intervertebral cartilage being visible, the bodies of the bones laterally being much enlarged, that on the left side extending to the intervertebral gap and nearly occluding the space, causing pressure and paralysis of the



THIRD AND FOURTH LUMBAR VERTEBRÆ IN CASE REFERRED TO ABOVE.

nerves as they gained exit from the spinal cord. The inner portion of the canal was quite smooth. I offer no hypothesis as to the cause of the mischief; probably others of your readers who have seen similar cases may be able to do so.

A WONDERFUL MILCH COW.

BY WALTER PERRYMAN, M.R.C.V.S.

RECENTLY having been attending a cob at a dairy where cows are kept on the premises, I was naturally desirous of seeing the animals, and was rewarded by finding what I think

a wonder of the bovine species. So much so, that I fear many of my readers will doubt the veracity of my statements. The facts were told me by the owner, who was quite willing to substantiate them, by producing the receipt, the man who brought the cow to the dairy, and one or two others as witnesses. I, myself, fully believe his statement. The cow in question was Dutch, had been bought at Smithfield Market in December, three years previously, being newly calved down (she had had about four calves). At first she gave eighteen quarts of milk daily, and continued doing so for about eighteen months. She then gradually dropped to eleven quarts a day, which quantity she had been giving for several months past. During the whole of that time (three years), she had not had a calf.

She will be kept, I was informed, until the quantity is reduced to eight quarts, then quickly dried and sold to the butcher. I may add she is quite fit for killing purposes now.

The cow is generally termed a milking machine. Could a more appropriate name be given this animal?

Editorial.

THERE is one practical question bearing upon veterinary education which is already attracting a good deal of attention, and which will have to be taken up in earnest before long. That is the question whether it is expedient or necessary to continue the enforcement of the rule that a candidate at an examination, who may have been rejected by the examiners in one subject, must appear again for all the subjects, including those in which he had satisfied the examiners on the previous occasion. The argument on behalf of the existing rule, apart from the consideration that it exists and therefore ought not to be changed, appears to be that it will not do to let down the standard by allowing a candidate to pass his examination piecemeal. It may not be unprofitable to notice in this connection that the experience of universities and cognate examining Boards does not appear to support this contention.

The type and exemplar of all the diplomas which are now given in the various professions, including our own, after a due course of education and examination is, of course, a University degree. This is the model which has been followed. It is worth noticing then, that in the early days of University graduation, where there was examination at all, there was only one examination for any given degree. But as

the range of subjects increased, and each subject was more severely examined in, it became absolutely necessary to divide the whole examination into portions; for example, that in medicine, into the now well-known first, second, etc., examinations respectively. The Colleges of Physicians and of Surgeons, and other similar bodies in all the divisions of the United Kingdom, have had to adopt a similar course; and thus we have young men receiving degrees from the Universities or diplomas from the Colleges, which degrees or diplomas certify their knowledge of subjects which they may already have in large part forgotten. It might be that theoretically every candidate ought to be absolutely fresh in all his subjects on the day he receives his degree or his diploma; but this is an unrealisable ideal, and in practice the subjects are divided into groups, and one group is passed at a time.

There can be no doubt in the minds of those experienced in the matter, that every student learns for examination purposes much which he does not afterwards retain in his memory. This is not an unmixed evil, however, and it would not be legitimate to say that he should only learn those facts which he is sure to remember afterwards. The great matter is once to have mastered a thing, once to have known it; then, when that subject comes up, the practitioner knows the general lie of the ground, knows where to get information about the point, knows enough about it to understand readily what he reads, or hears, or sees, and, at any time, knows enough to be able, by a kind of acquired instinct, to avoid making actual mistakes. Talleyrand was once asked by a lady, anxious for the welfare of her son, whether a knowledge of Latin was essential in the diplomatic service. "Not in the least, Madame," said he; "but it is of vital importance that he should have forgotten it." What he meant was, of course, that it was important he should once have known it so thoroughly that every part of the subject should in later life come under the category of something, if not remembered then, forgotten, not of something never learned. The man who has all his points always at his fingers' ends, is a professor or a consultant, and an ideal professor or consultant at that.

The present system, then, is the result of a compromise. On the one hand, it must be ascertained that the student has once mastered a considerable range of facts and principles; and, on the other, the examinations must be so arranged as to distribute his work equably, and not impose any impossible burden upon him at any one time. There is no broad prin-

ciple necessarily involved in this latter. It is a question of degree and of expediency only. Experience is our teacher as to what amount of division of the course of examination is found to enable us to get the best results from our students. The experience of other bodies ought, then, to be a useful guide to us.

Now, when we look at such a body as the University of Edinburgh, we see that there is, in the Faculty of Medicine, a decided drift in the direction of sub-division beyond what is provided for by the formal division into first, second, etc., professional examinations. Twenty years ago, any student of medicine who failed in one subject had to come back in all the subjects of the entire examination; then, the hardship came to be provided for by special exemptions in particular cases; now, it has become quite an ordinary thing to take two subjects at a time, and work steadily, at any rate, through the earlier part of the course on that basis. And further, even in examinations such as the LL.B., which cannot be said to be examinations designed for the average passman, and which may even be said to be designed in order to exclude him—even in such examinations it has been found necessary to permit the candidate to restrict himself to two subjects at a time.

Again, if we follow up the medical analogy, and look at what is being done by the Conjoint Board for Scotland, we find that they allow the candidate to pass less than a whole examination at one time, provided that he make a higher percentage on what he does pass. At the same time, a candidate who takes advantage of this privilege cuts himself off from the prospect of honours or distinction in that examination; for honours or distinction in any examination are only given to those who pass the whole examination at one time.

If we turn our eyes towards what is now a really severe examination, that for the English Bar, as regards percentages, we understand that the ordeal is searching, for an average of 75 per cent. in all subjects must be reached; but it is understood that even there it is possible to pass in two subjects at a time, which could not be formerly done.

The teaching of experience, the drift of practice, and the example of examing bodies of high standing thus seem to run in the direction of allowing, or even of encouraging, the student to distribute his examinational work better in the course of his curriculum, to concentrate his attention with more effect upon any given subject, and thus to attain a

higher standard, by taking a small number of subjects at one time.

We can scarcely credit the report that Major Tennant is to be appointed to the post of Head of the Veterinary Department of the Board of Agriculture. Such an appointment would be a deadly insult to the veterinary profession, and were it not the case that the salary of Professor Duguid is less than that of some of the clerks of the Department, we should feel inclined to deny even the possibility of such a thing.

We wish to draw the attention of our readers to the Act of Parliament on page 107, and to point out its importance to the profession.

JOHN GAMGEE.

OUR readers, and indeed all who are interested in veterinary and medical science and in the treatment of our domestic animals, must have observed with regret the announcement in the newspapers of the death of this distinguished savant which occurred on December 19th last. John Gamgee was the son of the eminent veterinarian, M. Joseph Gamgee, who still survives and has now reached the patriarchal age of 93. He was born at Florence on May 3rd, 1831, so that he was in his 64th year at the time of his death. Joseph Gamgee, the father of the deceased, was born in England, but early in life obtained an appointment in Italy which necessitated his going to live near Naples; thence after a number of years spent in gaining knowledge and experience he proceeded to Florence, where all his children but one were born and where the energetic and enthusiastic young English veterinary surgeon soon made a large practice for himself and laid the foundations of enduring fame. Joseph Gamgee was a devoted husband and father, and thought no effort too great and no sacrifice too painful if thereby he could obtain a better training for his children and advance their real interests. Accordingly all the young people obtained the very best training possible at the time in Italy, and John was sent to study anatomy under Professor Pacini of Florence, being intended by his father for the medical profession. But whilst he was pursuing these studies a change was made in the career of his elder brother, Joseph Sampson

Gamgee, who had been solemnly dedicated by his father to the veterinary profession, the elder Gamgee having a passionate love for his work and everything connected with the study of veterinary medicine, and being determined that one son, if possible, the eldest, should follow in his footsteps. It was decided, however, that Joseph should devote himself to a medical career, as he seemed to have more aptitude for that than for veterinary science, and John Gamgee was directed into his elder brother's place. He went in course of time to Alfort and likewise to the Royal Veterinary College in London to complete his studies and extend his experience, and in 1856 he came to Edinburgh to assist Professor Dick, and where he filled the anatomy chair with great satisfaction to the students. He was most assiduous in his duties; lectured twice daily, in the morning on anatomy and in the afternoon on physiology.

John Gamgee had early manifested a liking for engineering science, and even in Florence had shown abilities in this direction. Indeed, it is possible he might have followed such a career from the very beginning, had it not been for his father's determination that he should become a student of medicine. Be that as it may, it is true that John Gamgee, after severing his connection with the veterinary profession, took up engineering projects. He was interested in ice-making, and it was he who formed the well-known rink at Southport, in Lancashire.

M. Gamgee was a man of great refinement and the most polished manners. He had a fine appearance, being tall and well-built, and was greatly esteemed by a wide circle of friends.

BACTERIA MICROBES.

THE *Journal d'Hygiene* has the following interesting notes on microbes:—

"If, on the one hand, microbes are scattered over the whole surface of the earth, float in the air, and mix with the water we drink; and if, on the other hand, the organism is so widely accessible to them on its internal and external surfaces, how does it happen that health is not constantly endangered? The reason is that, apart from the powerful means of defence which the organism opposes to its enemies, these latter are themselves subject to causes of destruction which are most precious aids to us. Microbes are, in short, like all other beings, subject to the laws of nature; they become gradually enfeebled by the exhaustion of the nutritive media in which they exist, and undergo successive degradations which may be compared to those of senility, and which end, like that, in death. In addition, these legions of invisible

enemies meet in nature various destructive agencies: they resist with difficulty the action of light and the oxygen of the air.

"A. *Action of Light.*—It is generally found that twenty-five to thirty hours of exposure to the sun are sufficient to kill. The spore-bearing bacilli, when exposed dry to the solar light, resist a little longer, but end by perishing likewise at the end of six weeks or two months. Quite recently, Koch stated that solar light destroyed, in the same way, the virulence of the bacillus of tuberculosis in a few minutes or a few hours, according to the thickness of the cultivating layer exposed to its rays; the diffused light even would kill a cultivation within five to seven days. Finally, the non-spore-bearing species, such as the micrococci, are deprived of life at the end of a few hours of exposure to the sunlight of our country.

"B. *Action of Oxygen.*—The oxygen of the air is necessary or useful to the existence of the majority of microscopic micro-organisms, and yet, on occasion, this agent becomes for them one of the most active causes of destruction. When, that is to say, they no longer receive nutritive matter and the afflux of oxygen continues, this, in place of consuming only waste matter, as it does under normal circumstances, attacks the substance of the microbes themselves, which is gradually worn away, just as the tissues of the human body in cases of inanition. This is particularly true of the micro-organisms which are suspended in the air or scattered over sterile substances—which, in a word, are removed from their ordinary media of nutrition.

"The resistance of micro-organisms to the oxygen of the air is variable. Those most subject to its action are the micrococci, the *sporic* form of which is not yet known. The bacilli have much more power of resistance. A year of exposure to the air, at its ordinary temperature, is sufficient to kill the immense majority of the micrococci, whilst the bacilli have been found alive after several years of aeration. The life of the spores, which are, like the seed of vegetables, the agents of conservation or resistant form of the species, is prolonged still farther when they are kept in a closed jar from which the oxygen gradually vanishes. Under these conditions they have been found alive after the lapse of a quarter of a century. But these are exceptional conditions which are seldom realised in nature, the spore being specially liable to become dried up and to be blown about by the wind. M. Duclaux experimented on some tufts of cotton, loaded with millions of germs, that had been gathered from the air during a period of twenty years; these had been kept in diffused light under the ordinary dust conditions of our rooms, and were found by M. Duclaux to be absolutely sterile. 'However long,' says he, 'the resistance of bacilli or spores to the action of the air may be this resistance has yet a limit which determines the pollution of the atmosphere by them.' On this point, as on many others, observation and practice have anticipated the teachings of bacteriology; the opening up to the air and the sunlight of rooms which have been occupied by sick people, and of articles which have been handled by sick people, has at all times been regarded as the most efficacious of prophylactics.

"C. *Action of desiccation.*—Desiccation by dry heat likewise destroys germs, or at any rate their vegetation forms, for the majority of spores resist it. This fact has been demonstrated by the cholera bacillus of Koch; probably it is not an isolated case.

"These various data have a practical importance, in which hygiene is directly interested. The innumerable micro-organisms, vegetative forms or spores, which the decomposition of dead bodies and of organic matter of all kinds is constantly spreading on the surface of the ground, must as constantly be scattering themselves through the atmosphere. But there they meet, constantly active, the agents of destruction, whose power has been demonstrated by bacteriological research, namely, oxygen, light, heat. Thus, side

by side with living germs, the atmosphere must contain a still greater number of dead ones. This is confirmed by analysis. Analysis shows us that the countless dust-particles floating in the air we breathe, are for the most part mineral substances or dead bodies of microbes. We thus readily understand that the number of the latter which remain alive, must vary according to the extent of the sources of production, and the energy of the agents of destruction. It is for this reason that the air of a barrack is more polluted than the air of a private house, that mountain-air is purer than the air of a narrow valley, that ground rich in decomposable matter is more dangerous than a desert of sand or ice.

"D. *Action of water.*—In water, these germs have scarcely any more chance of preservation than in the atmosphere. Undoubtedly, Meade Bolton has fallen into exaggeration when he states that common aquatic bacteria are capable of living and multiplying in water, and that pathogenic microbes, and notably, the bacillus of typhus, which are more exacting than the others in their demands for nutrition, die off rapidly, not only in distilled water, but even in waters rich in organic matter. The researches of Wollhugel and Riedel, and especially the more complete researches of Strauss and Dubarry, show that a great number of pathogenic microbes (typhoid fever, cholera, tuberculosis, glanders, streptococcus, pyogenesis, &c.), can maintain their existence for a pretty long time in ordinary water, and even in distilled (sterilised) water, and that they are far from having as an absolute characteristic that rapacity for food which we are so apt to attribute to them. Nevertheless, even this tenacity of life has a limit which does not exceed eighty-one days for the typhus bacillus, a hundred-and-thirty days for the anthrax bacillus, and thirty days for the cholera spirillum. It may be that these limits themselves, determined by laboratory experiments, are too wide, at least so far as concerns the bacillus of typhus and anthrax. This seems to be the outcome of some experiments made at Munich, which have the advantage over the others of following more closely natural conditions."

DR. VOELCKER ON MANURES AND CAKES.

Castor-oil Bean in Linseed Cakes.

THE occurrence of castor-oil bean in linseed cake is, in my experience, almost confined to the case of foreign-made cakes, and especially those that come from Marseilles. At the latter port a good deal of castor bean is crushed, and care is not always taken to thoroughly clean the mills of it before putting them on to linseed or other seed crushing. This constitutes one of the chief risks run by farmers who purchase cheap foreign-made cakes. In one instance that came under my notice, a delivery of cake, sold as "Round Italian linseed cake," was found to contain castor-oil bean, and over thirty lambs died from eating it. In another case a farmer had been unwise enough to purchase the sweepings of wharves, floors, &c., and into these some castor-oil bean had found its way. On giving it to a flock of ninety-six sheep, twenty-five of them died, and all the others were more or less affected. It need hardly be said how great is the risk run in using as food for stock such materials as the sweepings of mills, floors, &c.

In reference to the occurrence of castor-oil bean in linseed and other cakes, it is well to point out that a difficulty may exist in subsequently tracing the actual presence of the poisonous seed, for, inasmuch as it is seldom or never put in purposely, but finds its way in by some means, such as that described in the crushing of linseed immediately after castor seed has been used in the same mill, it is quite possible that only the first lot of cakes of a delivery may contain the castor seed, while others may be free from it. An examination of a single cake may thus, presumably, lead to the conclusion that no castor is

present. In all such cases, several cakes from different parts of the delivery should be separately examined for the presence of the poisonous seed.

Cotton Cakes.

Perhaps in no recent year has cotton seed come over to this country more "woolly" and dirty than during the past season. Nor has there often been less trouble taken generally in cleaning it. Sand, as noticed in my last annual report, has again been prominent by its quantity, and, taking it all round, the common or undecorticated cotton cake has been singularly poor in quality this year.

In one case in which I had reported that a sample of cotton cake was "very woolly in character, the seed not having been properly cleaned from wool," it was ascertained that three bullocks that had been feeding on the cake had to be slaughtered. The vendors of the cake admitted its bad condition, and the liability incurred.

In a second case, the cake again being full of wool, animals to which it was given refused to eat it.

In a third instance, though the cake was sold as "Pure Egyptian cotton cake," it was found not only to contain a great deal of wool, but also actual pieces of rope crushed along with the cake.

The presence of an excessive quantity of wool, owing to imperfect cleaning of the seed, constitutes, in my opinion, ample ground for considering such a cake "impure," and I shall, in future, report accordingly.

CASTRATION BY LIGATURE OF THE CORDS AND A SINGLE INCISION OF THE SCROTUM.

(From the *Recueil de Mèdècine Vètèrinaire.*)

In a paper read before the *Société Centrale de Mèdècine Vètèrinaire*, M. Cagny says:—"In castrating horses by the elastic ligature, I had more than once operated by making a single incision in the scrotum. Availing myself of the experience thus acquired, and remembering the objections raised against the operations of my fellow-practitioners—the trifling difficulty of fixing the clam on each cord, and the possibility of hæmorrhage when applying torsion—I thought it possible to combine ligature and torsion. The following is an account of what I did in the case of a horse of the English racing breed: The horse was born in March, 1892, and the operation performed in April of this year (1894). I made it a point to put myself in the position of the ordinary practitioner, so far as antiseptics are concerned, and operating without assistance.

"The horse was hobbled and cast in the usual way, and the parts were washed with a solution of cresyl, not measured. This was found to be too caustic, and afterwards brought about slight œdema of the opening of the sheath. A ligature was applied to the skin of the testicular mass in order to keep the region of the envelopes well stretched, and to facilitate the incision made on the median line of the scrotum. This incision must be made so long that, when the scrotum is laid open to right and to left, the operator may pull out the two testicles, whose envelopes have been opened at the same time; but I have never tried to enucleate the testicles nor cut the white muscle.

"The ligature of the skin being removed, taking one testicle in each hand I cross them several times over one another so as to twist the two cords. It is to the combined cord thus formed by twisting the two single cords that I apply above the epididymi a ligature of catgut No. 6. I give the catgut several turns; it sinks into the twisted mass of the cords. I make a tight

knot in the catgut, and then I cut the testicular cords below the ligature. There is no hæmorrhage. I wash the wound with the solution of cresyl, and suture the incision in the skin with catgut. As I was afraid of hæmorrhage, and of being obliged to re-open the wound (and this had already occurred with M. Benjamin), I left in the posterior part a longish space without suture. The result was: no hæmorrhage, no œdema of the part operated upon, cicatrisation by first intention of the carefully-sutured part of the wound, slight suppuration of the part left open. Before allowing the horse to rise I had simply washed the region with solution of cresyl.

"I have also operated in the same way, and obtained cicatrisation by first intention in a boar one year old, and in two dogs of the same age.

"In these experiments I have made use of catgut No. 6, and Doyen's needle, which appears to me to be more suitable for the veterinary surgeon. I have ascertained that the application of the ligature is easier when, after torsion, an assistant raises the two testicles by pulling them slightly.

"The animals did not suffer by the operation. In the case of the dogs, I observed for a day or two a difficulty in rising and in walking, and slight uneasiness at the extremity of the cords, but that seemed to me to arise from the shortness of the cords. It is certain that in animals with short cords the operation is more difficult.

"Having shown the possibility of cicatrisation by first intention of the cuts, or of the single cut in castration, and wishing specially to study the chances of hæmorrhage in the operation, I dispensed, in the case of two young pigs two months old and of two young cats, with the sewing up of the skin; having no catgut I had employed indiarubber string, which has this defect, that it cuts too rapidly the mass which it compresses. I merely replaced in the wound the extremities of the two cords, and washed the parts with a solution of cresyl; there was not the slightest complication. I ordered the pigs to be placed in a clean sty with dry bedding, but on the eighth day, taking advantage of their keeper's carelessness, they got out of the sty and ran to wallow in a mess of filth and urine at the side of a dung-heap; after this they were allowed to wander about the yard as they liked, and they were never a bit the worse.

"In dealing with our client's stock, we are not permitted to make experiments, and I have, therefore, never again been able to renew this treatment on the horse, but it seems to me quite practicable, and I make this communication in the hope that those of my *confrères* who can, will make the experiment and let us know the results. My way of treatment is more rapid than the separate torsion or separate ligature of each cord. I have on former occasions tried the single incision along with the elastic ligature. Then I did not think about sewing up the single cut, and I ligatured the two cords *en masse*, and did not twist them; the testicles came away without hæmorrhage in a day or two. It might, perhaps, suffice to do the same with the catgut, or to cross the two cords only once, and so diminish the risk of dragging."

In the discussion which followed, M. Benjamin said: "I am not surprised that M. Cagny had no accidents with his new method of castration, because he operated only on small animals, or on thoroughbred horses whose cords are not voluminous. I confess I should not like to try his operation on big horses, whose cords have considerable volume. I should be afraid of hæmorrhage. I must add that M. Jacoulet operated on a horse lately by his process—a single scrotal incision and ordinary simple torsion—and cicatrisation followed rapidly and without pus.

SLAUGHTER OF INJURED ANIMALS.

THE following Act of Parliament bearing upon the above subject has been passed :—

CHAPTER XXII.

AN ACT to enable police constables to cause horses and certain other animals when mortally or seriously injured to be slaughtered. [20th July, 1894.]

BE it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows

1. This Act may be cited for all purposes as the Injured Animals Act, 1894.

2. If a police constable finds any horse, mule, or ass so severely injured that it cannot without cruelty be led away, he shall, if the owner is absent or refuses to consent to the destruction of the animal, at once summon a duly registered veterinary surgeon, if any such surgeon resides within a reasonable distance, and if it appears by the certificate of such veterinary surgeon that the animal is mortally injured or so severely that it is cruel to keep it alive, it shall be lawful for the police constable without the consent of the owner to slaughter the animal or cause it to be slaughtered with such instruments or appliances, and with such precautions and in such manner as to inflict as little pain and suffering as practicable.

3. Any reasonable expense which may be incurred by any constable in so slaughtering any such animal or causing any such animal to be slaughtered, or in removing the carcase of such animal from any street or public place for the purposes of this Act, may be recovered from the owner summarily as a civil debt. Subject as aforesaid, any expense incurred in the execution of this Act shall be defrayed out of the fund from which the expenses of the police are payable in the area in which the animal is found.

BOARD OF AGRICULTURE.

IN the *London Gazette* of January 4th, there appeared a summary of the returns relating to contagious diseases of animals during the past year :—

Pleuro-pneumonia.—With reference to this disease, we find that 15 cases were found during the year as compared with 30 in 1893. In looking back through the weekly returns, we find that all these 15 cases were in the counties of Kent and Middlesex. In association with these diseased animals, there were 391 cattle which were slaughtered by order of the Board of Agriculture, and found free from the disease. In addition to the above, 41 cattle suspected of being affected with pleuro-pneumonia, were slaughtered, and found, on *post-mortem* examination, to be suffering from other diseases.

Foot-and-mouth Disease.—During the year there were three fresh outbreaks of this disease, one in Essex, one in Kent, and one in Cambridgeshire. In the Essex outbreak, the seven cattle attacked were slaughtered, and as no others had been in immediate contact with them, no extension of the disease from this centre took place. In the Kent outbreak, the sheep, among which it appeared, some 56 in number were slaughtered, no further extension occurred. In the Cambridgeshire outbreak, the 205 sheep, among which it appeared, were carefully isolated, and the disease did not even spread to the other animals on the same farm.

Swine-fever.—The returns relating to this disease are not very satisfactory. We find that during the year no less than 7,231 pigs died from swine-fever, 56,296 pigs were slaughtered as diseased or as having been exposed to the risk of infection, but the returns do not show how many of these were actually diseased. In addition to the above 1,320 pigs suspected of swine-fever were slaughtered by order of the Board of Agriculture, and found on *post-mortem* to be free from that disease.

Anthrax.—During the year there were 494 outbreaks of this disease in Great Britain, and 998 animals were attacked. In 1893 there were 563 outbreaks of anthrax, and 1,300 animals attacked.

Glanders (including Farcy).—The returns show a decrease; there were 969 outbreaks and 1,436 horses attacked as compared with 1,381 outbreaks, and 2,133 horses attacked in 1893.

Rabies.—With regard to this disease the returns show an enormous increase. There were during the year 256 cases as compared with 94 in 1893, 40 in 1892, and 81 in 1891. These cases of rabies occurred mostly in Lancashire, York W. R., and the West of Scotland.

Obituary.

H. E. Wilkinson, Newcastle-on-Tyne,	graduated,	May, 1852.
E. J. King, Diss, Norfolk	,,	May, 1854.
Geo. Marshall, Glanton Alnwick	,,	April, 1877.
J. A. Hoskinson, Partington, Yorks	,,	May, 1860.
John F. Fyrth, Bradford	,,	April, 1876.

Reviews.

VETERINARY THERAPEUTICS AND PHARMACOLOGY. By E. WALLIS HOARE, F.R.C.V.S., CORK.

This is a book that will undoubtedly be of service to students and practitioners. Mr. Hoare has, however, hardly done himself justice. When he gives us his own experience, he writes tersely and lucidly, and it is a pity, therefore, that from want of time, as he himself states, he has not given us more of it, but has been compelled, in a great measure, to adapt from works on human materia medica. Veterinary pharmacy is treated of in an appendix, and covers twenty-three pages.

Mr. Hoare, in the next edition of the work, will be well advised to extend this part a good deal, and if this should necessitate the elimination of some physiology and pathology from the book, it will make it a more useful volume to students and to practitioners. The prescriptions will, doubtless, be of service. Some are distinctly good. But here, again, there is evidence of haste, the Latin endings being sometimes put in the nominative, and, at others, in the genitive. This is, perhaps, a trivial fault, yet in a volume intended to serve as a text book, it should certainly not occur.

Physostigmine is stated here to contract the pupil by stimulating the third nerve, and muscarin is said to dilate the pupil. It was because too strong or too irritating a solution was used by Ringer, that he found the pupil dilating after muscarin was applied. It is really a myotic, as is well known, and physostigmine contracts the pupil, not by stimulating the third nerve, but by stimulating the muscular fibres themselves.

MANUAL OF VETERINARY MICROBIOLOGY. By Professors MOSSELMAN and LIENAUX, National Veterinary College, Cureghem, Belgium. Translated and edited by R. R. DINWIDDIE, Professor of Veterinary Science, Arkansas State University, etc., etc. (Cincinnati: The Robert Clarke Company. 1894.)

In his preface to this treatise, the translator says "his object has been to supply English-speaking veterinary students and practitioners with a work on bacteriology which seemed specially adapted to their needs." To the latter, especially if acquainted already with modern histological methods in their simple applications, this book will be of much service, and even if, from

defective training, he be unable to verify its statements at his microscope, he will find in it much of great practical interest. The veterinarian in daily practice is told that he is "under the necessity of having recourse to the teachings of microbiology; the inspection of meat and the supervision of the sanitary duties which have devolved upon him, make it his imperative duty to neglect no means of diagnosis which science places at his disposal." And again, "everyone can understand how desirable it is that the practitioner, meat inspector or sanitary veterinarian, whose decisions very frequently run counter to some particular interest, should give his opinion only after having made use of this last resource." Without the use of a fairly well-conducted laboratory for specialised bacteriological work, however, and the help of a teacher, we rather fear the average student would find it somewhat difficult to fully utilise the important matter the book contains. The early chapters contain an excellent account of the morphology and physiology of microbes in general, in which we are glad to see polymorphism spoken of as undoubted, a fact some prominent British authorities have been slow to recognise. An almost entire absence of illustrations, however, renders the morphological descriptions more than usually dependent on educational demonstration. In a text-book this is no special fault where practical work must of necessity accompany the reading. In the physiological portion of the work, the authors notice all the more prominent theories and discoveries up to date, among these the adjuvant action of intestinal germs receiving consideration. While carefully denying the possibility of spontaneous generation, we meet, however, the statement, given quite frankly, "that at a period in the remote past, organised matter must have been spontaneously formed at the expense of mineral matter," but that now this "molecular association is no more produced." Fermentation and putrefaction are, for so small a treatise, well described. The classification of microbes given is that of M. Guignard. The individual description of microbic diseases, which forms the bulk of the book, is preceded by a discussion of the following points of interest: the distribution of pathogenic germs, heredity, immunity, receptivity, attenuation and the action of antiseptics, of which a fairly good list is given in order of their intensity of action. Although criticism is disarmed by the translator telling us in his preface that "the book is not intended for a laboratory manual, consequently the technique of staining and cultivation of germs is not exhaustively discussed," still, in a students' book, we cannot help wishing that, with so much valuable information, we had been given fuller instructions in the methods of working. A fairly good general account is given of stains and staining methods, but it is presumed the reader has already made himself acquainted with the methods of cutting and manipulating microscopical sections. The book claims to treat essentially of "animal" diseases, those of man being only incidentally referred to, but it is not forgotten to warn the practical worker of the many dangers he incurs in handling certain morbid tissues, and to advise the complete destruction by fire of whatever is not retained for actual examination, and the thorough killing of all germs in the parts retained, except in those to be used for inoculation or cultivation experiments. We are convinced that from neglect of these simple precautions, much ill-health, and even loss of valuable and promising lives have resulted, even where all necessary appliances were at hand, simply because the investigator was either too confident or too careless to use them.

Army Veterinary Department.

VETERINARY-LIEUTENANT E. P. J. Barry is transferred from Aldershot to Woolwich, and Veterinary-Lieutenant W. E. Russell from Aldershot to Canterbury.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

A QUARTERLY Meeting of the Council of the College was held at 10, Red Lion Square, Bloomsbury, W.C., on Wednesday, the 23rd ult., Mr. W. Hunting, President, in the chair.

Present:—Professors Edgar, McFadyean, McCall, Penberthy, and Owen Williams; General Sir F. Fitzwygram; Messrs. Abson, Dollar, Elphick, Faulkner, Fraser, Hedley, Kidd, Lawson, Mason, Mulvey, Nisbet, Peele, Thompson, Trigger, Wheatley, and Wragg; Veterinary-Colonel Oliphant.

The minutes of the previous meeting having been signed as correct,

Mr. TRIGGER drew attention to the loss the veterinary profession had sustained by the death of Professor Walley; and moved, "That this Council place on record, and that the same be conveyed to the family and relatives of the late Professor Walley, the deep sense of the loss it has sustained."

Mr. FRASER seconded the motion, which was agreed to.

Correspondence.

The SECRETARY reported that he had received a letter from Mr. Green who had recently passed the Fellowship Examination, asking that he might be allowed to have a copy of his thesis.

On the motion of Mr. TRIGGER, seconded by Mr. FAULKNER, it was agreed that a copy of Mr. Green's thesis might be made.

The SECRETARY read a letter from a student, stating that having arrived at the written examination, held at Edinburgh, some six minutes late, he was refused admittance, and asking if there were any bye-law justifying that refusal, seeing that no one had left the room. If there were no bye-law to that effect, he asked that his examination fees might be returned.

It was agreed to defer the consideration of the matter until later on, when the reports of the examiners came to be dealt with.

The SECRETARY also read a letter from another student, who was a quarter-of-an-hour late, requesting a special Examination, and, if necessary, permission to present himself, if successful, at the final, next December, and asking that his fees should hold good for that examination, the consideration of which was also deferred.

The SECRETARY also read a letter from the examiners in cattle pathology of the R.C.V.S., awarding the Royal Agricultural Society's prizes for 1894 as follows:—1st prize to Mr. F. W. Carless, and 2nd prize to Mr. G. W. Freer.

Presentations to Library and Museum.

The SECRETARY announced the following presentations:—To the library: By Professor McFadyean, a copy of the *Journal of Comparative Pathology and Therapeutics;* by Mr. Wallace Hoare, a copy of works on Veterinary Therapeutics and Pharmacology; the "Calendar of the Royal College of Surgeons, England," and "Proceedings of the Russian Veterinary Medical College," written in French. To the museum: From the Museum Department of the Pharmaceutical Society, a calculus taken from a horse, and which was supposed to belong to the late Dr. Periera.

On the motion of Mr. WRAGG, seconded by Mr. FAULKNER, votes of thanks were accorded to the donors.

Registration Committee.

Mr. THATCHER (solicitor), in the absence of Mr. James Simpson, the chairman of the Registration Committee, whom illness prevented from being present, read the report of the Registration Committee, which stated that the

committee had had 50 cases to consider, of which 18 arose under section 17 19 were charges of unprofessional conduct in advertising, and four for unprofessional conduct generally. In one case the committee recommended prosecution. It reported that in the majority of cases where charges had been brought against members for advertising, the persons complained of had signed a letter expressing their regret and undertaking to discontinue the practice. The committee recommended the restoration of Mr. Hawke and Mr. Bartlett, as members of the College, on payment of the usual fees, the explanations given by them being satisfactory.

The SOLICITOR asked that the name of Mr. Park should also be restored. Mr. Park had given the usual declaration, and was willing to pay the fees.

On the motion of Mr. FAULKNER, seconded by Professor PENBERTHY, the report was adopted.

On the motion of Mr. ABSON, seconded by Mr. LAWSON, the name of Mr James Coulson was removed from the register for a series of offences under section C of the Veterinary Surgeons Act.

Examination Committee.

Mr. MULVEY read the Report of the Examination Committee which stated that certain instruments had been purchased at a cost of £37 odd. With regard to the election of examiners the Committee recommended that the examiners be appointed for the four years course as follows :—Six examiners in class A., six examiners in class B., and four examiners each in class C. and D. For the three years course the Committee suggested that the examiners in anatomy, histology, and physiology officiate under the new rules, and they further recommended that four examiners be elected to examine in class C under the old rules of the three years course. In conclusion, the Committee recommended to the Council 40 per cent. as a minimum of marks to pass, and that the students rejected in the examination in December last should not in future examinations be required to undergo examinations in zoology. He moved the adoption of the Report.

Mr. TRIGGER seconded the motion.

Professor W. O. WILLIAMS moved as an amendment that there be added to the Report "that it also includes those students who were eligible at Christmas but did not present themselves for examination."

Professor MCFADYEAN, in seconding the amendment, said he understood there were certain students who, from some cause or other, did not present themselves last December. It was rather hard that they should not have the advantage of the session. As far as he knew it did not affect any students of his own, but he thought it was right if there were students who had thus been circumstanced last year that they should have the advantage.

Mr. MULVEY said that personally he dissented from the latter part of the recommendation of the Committee, and he did so because students when they entered subsequent to January 1893 knew full well that zoology was included in their curriculum, and if by the leniency of the College and for their own convenience they did not choose to examine in that subject at the last examination he did not see that that was an excuse for students not having to undergo examination in future.

The PRESIDENT said that Mr. Mulvey had moved the adoption of the Report.

Mr. MULVEY: As chairman. As an individual member of the Committee he did not agree with that one clause in the Report.

Mr. LAWSON said that if it would facilitate the business he would propose the adoption of the Report.

The PRESIDENT said that would allow Mr. Mulvey to take his own course.

Professor EDGAR said that as the recommendation in the Report to alter

the minimum number of marks to 40 would clash with bye-law 83 it would be necessary for that to be brought forward *de novo*. Bye-law 83 distinctly stated that the minimum number should be 45, and now it was sprung upon the Council that the minimum was to be 40. The recommendation of the Committee would be diametrically opposed to the new bye-law, and he submitted that it ought to be brought forward after three months' notice.

The PRESIDENT said that the motion which was carried by the Council that 45 per cent. should be the minimnm had never been confirmed by a special meeting, and therefore it only had the weight of a resolution. If the new bye-laws were carried at the special meeting to be held that night, it would be law that 45 per cent. be the minimum, but if the Council liked to alter it they could do so by giving three months' notice.

Mr. ELPHICK did not see any reason why the regulations should be loosened to suit the convenience of students, and he would certainly vote against Professor Williams's proposal. Those who did present themselves for examination in December, and were rejected, should be allowed to go up under a similar examination, but those who did not see fit to present themselves from any cause, he thought should not be allowed to go up in that way.

The PRESIDENT then put Professor Williams's amendment, which was lost.

Mr. MULVEY moved as a further amendment, "That all students presenting themselves for examinations in May should undergo the examination as laid down in the four years' course," which was seconded by Mr. LAWSON.

Mr. Mulvey's amendment was then put and lost.

Professor MCFADYEAN moved as an amendment, "That the recommendations of the Examination Committee with regard to the election of examiners be not adopted at present, and that discussion be postponed to the special meeting," which was seconded by Professor W. O. WILLIAMS, and lost.

Professor EDGAR moved "That 45 per cent. remain the minimum marks for students passing."

Professor MCFADYEAN said that a full meeting of Council in the month of April last decided that 40 was to be the minimum, and that was acted upon in the month of May. A small committee meeting opposed that recommendation of the Council, and said 45. He thought that not one-half of the members of the Council knew of the alteration having been made. It came as a great surprise to the teachers and to the students in the December examination to find that whereas students was passed in May with a minimum of 40, students were rejected in December with a minimum of 45. It was adopting a higher standard than could be quoted from any examining body in the Kingdom.

Professor EDGAR said he was prepared to produce not only the evidence of one examining body, but half-a-dozen examining bodies, if necessary, that 40 per cent. was not the minimum; that 50 per cent. was demanded. It must be remembered that that was not a minimum for a subject, but an aggregate minimum, which was a vastly different thing. The written and oral gave a man an immense scope. He had power to compensate himself enormously in one stage of the examination as against the other being bad. In class B about four-fifths of the men came out with honours in the last examination.

Professor MCFADYEAN said that Professor Edgar, without knowing anything of the quality of the men in the last examination, assumed that because a larger proportion of them obtained good marks and got honours, the examinations must have been easy. He (Professor McFadyean) emphatically dissented from it. The examinations might not have been one bit easier than they were in May, when very few obtained honours. He thought that it was unfair to assume that the examination was very easy because a high proportion of students obtained honours.

Professor Edgar's amendment was then put to the meeting and carried.

Mr. TRIGGER proposed that the whole report be referred back to the Examination Committee, with the intimation that "this Council have passed a resolution that the number of marks be 45 per cent."

Mr. LAWSON seconded the proposition, which was carried.

Finance Committee.

Mr. TRIGGER moved the adoption of the report of the Finance Committee, which was seconded by Mr. Lawson and agreed to.

Steel Memorial.

The SECRETARY read the report of the Steel Memorial Committee, which stated that a die for a gold medal would cost £30, and £6 for each medal struck, and such medal would have no special design, except the College Arms, and perhaps a wreath. A die for a medallion portrait would cost £70, and bronze medals struck from it could be obtained for about a guinea each.

On the motion of Mr. TRIGGER, seconded by Professor MCCALL, it was agreed that the Steel Memorial medal be bronze, and that it have as a design on one side a medallion portrait of John Henry Steel.

Publication Committee.

The SECRETARY read the report, which, among other things, recommended that the professional journals should be allowed to send reporters to the meetings of Council.

Mr. ABSON moved the adoption of the report, which was seconded by Professor MCCALL.

General Sir FREDERICK FITZWYGRAM moved, as an amendment, and Professor WILLIAMS seconded, "That the official shorthand-writer to the College should furnish each veterinary journal with a copy of his transcript."

This amendment was last, and the report of the Committee was adopted.

Court of Examiners.

The SECRETARY read the report of the Court of Examiners, which stated that at the Final Examination held in London, 41 students were examined, of whom 26 were passed and 15 rejected; at the Second Examination, 48 students were examined, of whom 34 were passed and 14 rejected; A Examination, 37 students were examined, of whom 17 were passed and 20 rejected.

In Class A, at Glasgow College, 20 students were examined, of whom 7 were passed and 13 rejected; at Dick College, 22 students were examined, of whom 15 were passed and 7 rejected; at New College, 23 students were examined, of whom 6 were passed and 17 rejected. One Edinburgh student more should have been examined, but he was disqualified for being late for the Written Examination. One Glasgow student also failed to come up for his Oral Examination.

In Class B, at Glasgow College, 16 students were examined, of whom 9 were passed and 7 rejected; at Dick College, 35 students were examined, of whom 19 were passed and 16 rejected; at New College, 22 students were examined, of whom 13 were passed and 9 rejected. One Edinburgh student more should have been examined, but he was disqualified for being late for the Written Examination.

In Class C, Oral, at Glasgow College, 15 students were examined, of whom 6 were passed and 9 rejected; at Dick College, 33 students were examined, of whom 18 were passed and 15 rejected; at New College, 27 students were examined, of whom 13 were passed and 14 rejected. One Edinburgh student more should have been examined, but he was absent on sick certificate.

In Class C, Practical, at Glasgow College, 9 students were examined, of whom 8 were passed and 1 rejected; at Dick College, 24 stndents were examined, of whom 18 were passed and 6 rejected: at New College, 21 students were examined, of whom 17 were passed and 4 rejected.

The CHAIRMAN of the Examining Board in Class A reported that the written papers in the several subjects were not so good as might have been expected, but there was no evidence of the copying complained of at the May examinations. The examiners regretted the high percentage of rejections in Class A, which was unusual even for a December sitting, and which they ascribed mainly to students not giving sufficient attention to the practical department of their studies. The Chairman of the Examining Board in Class B reported that the standard of merit remained about the same as in previous years. The examiners in Class C, Oral, reported that they had found the arrangements for conducting the examinations satisfactory at each centre, and the Chairman of the Class C Practical Examination, reported that a larger number of students than usual in December had presented themselves for examination, and there was a marked improvement in dispensing and the writing of the prescriptions. The students generally were better up in practical work than on any previous examination, and hence there was generally a larger percentage of passes.

Mr. MULVEY asked that the record sheets of the examination might be produced. He did not suggest that there were any irregularities, but he thought certain mistakes had been made in awarding the marks. There was a case of a student who had obtained 63 marks and no honours had been awarded to him, whereas in another case a student only obtained 40 marks, and he had been passed as "sufficient."

On the record sheets being produced, this was found to be the case, and the PRESIDENT stated that he had written to the Chairman of the Board of Examiners drawing attention to the fact, and the explanation was that there was a mistake in the marks and that it was 20 instead of 15 in one subject. He (the President) thought that in the case where honours had not been awarded when they ought to have been the Council ought to make it known that the man had passed with honours. He also drew the attention of the Council to the fact that the practical examiners had failed to award the marks as requested by the Council, but had continued in the old way of "Bad, "Sufficient," and so on.

It was resolved "That the Secretary be directed to write to the gentlemen who acted as examiners at the last practical examination, inquiring why they did not carry out the instructions of the Council in marking by numbers."

The PRESIDENT said that the report showed that the examiners took upon themselves in one case to reduce the time of examination from 15 minutes to 8, and it was resolved, on the motion of Professor EDGAR, seconded by Mr. MULVEY, "That the class A examiners be asked for an explanation of the secretary's statement that they shortened the time of examination by 40 minutes."

On the motion of Mr. TRIGGER, seconded by Mr. FAULKNER, it was resolved that the report of the examiners with all the papers in connection with the last examination, be referred back to the Examination Committee for consideration and report.

Fellowship Degree.

The SECRETARY read the report of the examiners, which stated that a meeting of the Court of Examiners had been held in London on December 14th, and in Edinburgh on December 18th, when Messrs. E. F. de Jong, J. R. Green, and Mr. H. Watkins-Pitchford presented themselves for examination and passed.

On the motion of Mr. MASON, seconded by Mr. LAWSON, the report was referred to the Examination Committee.

Motion by Professor W. O. Williams.

Professor WILLIAMS in moving, "That at this meeting the dates of the next examinations be fixed," said there were three reasons why he had brought the motion forward. The first and most important was in order that teachers

might know exactly the length of time they had to teach in. It was very hard on teachers to find that they had an additional six weeks or so added to their teaching when they had just about finished their subjects. Another reason was, because the students did not know how to regulate their work, and the third reason was because practitioners were put out by finding their pupils were away at the date they were expected back.

Mr. TRIGGER seconded the motion.

Mr. MULVEY believed the charter distinctly stated that the time for the next examination should be appointed at the meeting immediately preceding.

Mr. TRIGGER referred to the fact that the Scotch College which was opened in September of last year, had asked to have an examination a month earlier. The Council refused to permit it, however, and insisted that the examination should take place at the same time as usual.

Prof. MCFADYEAN moved, and Prof. MCCALL seconded, "That theCouncil recommend that the next Written Examination be held on Monday, May 13th."

Mr. TRIGGER gave notice that he would at the next Council meeting move that that be the date of the next examination.

Professor McFadyean's motion was agreed to.

Proposed Grant to the British Institute of Preventive Medicine.

Professor EDGAR, in moving "That a sum of £300 be offered to the British Institute of Preventive Medicine for the establishment of a veterinary laboratory in which work may be done for the advancement of veterinary science by veterinarians," said that whatever difference of opinion might exist on the Council as to the advisability of making a grant to the British Institute of Preventive Medicine, he ventured to think that they would be unanimous in the opinion that it was quite time they arrived at some conclusion in the matter. It had been brought before them, in a direct and indirect way, for nearly two years, and it behoved them, as representing the profession in this country, to set their seal either to the matter of granting a sum of money to the Institute, or to say that they did not consider it worthy of their support. The first point they had to consider was whether the Institute was worthy of the support of the College as representing the veterinary profession of the country. The whole matter had been discussed in detail; the aims, objects, and methods of working it had all been brought before the profession, and so far, he thought, as the judgment of almost every scientific man was concerned, it was calculated to advance that which the profession had near at heart. If so, there must necessarily follow the other conclusion—that it was worthy the support of the profession. The next point, and, perhaps the most important, was with reference to the grant which he asked them to make—what sum of money would be worthy of the College, and whether they could afford it. If they considered that any scheme was worthy of their investing a sum of money in, they necessarily asked how much they could afford to spend. Probably they would be met with one of the strongest arguments—whether any sum at all should be granted. The next question was as to the amount which they might think worthy of the influential position of the profession. Mr. Abson, on a previous occasion, had asked that £250 should be granted, and did not receive very much opposition. The Lancashire Veterinary Medical Association had offered to grant a sum of £50 if the College granted £500, and the sum of £25 if the College granted a lower sum. That, he thought, was a clear indication that the majority of the members of the Association were in favour of the College granting £500, and they did not consider it a very large sum of money for them to spend. All he asked of them was to make a grant of £300 to the Institution, which, at a moderate computation, would, perhaps, not return them 2¾ per cent., but would return to their sons, and those who were following in their work, 2,300

per cent. interest, which really could not be estimated in money value. He asked them to consider the question very carefully, because it would have a bearing, probably, upon the future of the profession. It would seal, to a certain extent, the views the College held, from a monetary point of view, as to the advantage of scientific training, and the value they placed upon it in connection with the progress of their profession. He considered that they could not, with any feeling of dignity at all, offer a sum of less than £300, and that would, probably, be supplemented by a very handsome sum from the various veterinary medical associations, which would go together to form a nucleus for establishing a very good veterinary laboratory. Another question arose—Was there any existing agency doing a work having a prior or stronger claim upon the funds of the College? Until quite recently he was not familiar with the fact that work and original research could be conducted in the laboratory existing at the Royal Veterinary College, Camden Town, other than by undergraduates. He had been under the impression that most veterinary surgeons and medical men who had desired to work in bacteriology and original research had been trained during the last six or seven years at the laboratory at King's College. He knew that a great many veterinary surgeons had augmented their scholastic education by going there and taking post-graduate courses in that work. The work carried on in the research laboratory at Camden Town School was, he believed, largely owing to the munificence of the Royal Agricultural Society, if it was not entirely carried on at their expense. The question had been raised as to whether the College could make a grant which would in any way assist one teaching institution without assisting others. He did not quite see the logic of that argument; but at the same time he thought the Council would have to be exceedingly guarded how it gave support to one veterinary school without giving support to all. If they could gain any advantage by offering a sum of money to the British Institute of Preventive Medicine, and thereby establish a means by which veterinary surgeons would be able to pursue original research, untrammelled in any way by private institutions or by the Royal Agricultural Society, so much the better, for they would be practically free agents. If they decided to give this sum of money to the Institute, the question arose—Would they be satisfied with the conditions upon which he had suggested that it should be offered? He did not propose to adhere with very great keenness to the conditions, and, for himself, he would be in favour of granting a sum of money unconditionally. He thought if the College gave £300 absolutely unconditionally to the Institute, it would be money well expended. He did not undervalue in any way the magnificent work which had been done at the laboratory at the Camden Town School. All honour to the men who had been pioneering the work there, and who had raised the veterinary profession to a position of honour in scientific research. They all honoured Professor McFadyean and his work in the College, but he did not see why there should not be two or three Professor McFadyeans in the country, instead of one.

Mr. LAWSON seconded the motion. He thought Professor Edgar had been very modest in his demands.

Professor MCFADYEAN said he would like it to be made clear whether the college was giving that sum to the British Institute to found a laboratory in which any graduate might conduct private research, or to promote it as an institution which was to teach bacteriology and pathology. He would like to ask Professor Edgar if he knew of a single veterinary surgeon who would wish to conduct a private research, and was capable of doing it, who could not find a laboratory in which to carry it out. If there were many members of the profession who were anxious to follow pathology and bacteriology or who were anxious to conduct researches on those subjects, and could not find

places in which to carry them out, he thought the motion would, to a certain extent, be an advisable one, but he thought there were many other things which had prior claims on the generosity of the college.

Mr. WRAGG said he could assure the members that his sympathies were quite with the good work which was proposed to be done by the British Institute of Preventive Medicine, but he could not allow his sympathy to override his opinion as to whether the college could afford to give so large a sum as £300 at the present moment out of its funds. The sum they were asked to give to the Institution was a twenty-fifth part of their reserve fund. He thought they ought to be very careful of their funds. He begged to move as an amendment, "That this college give the sum of £100 towards the funds of the British Institute of Preventive Medicine."

Mr. TRIGGER seconded the amendment. He thought it was very improbable that if a sum of £300 was given they could ask the Institute to accept it with conditions. He thought it would be far more graceful if they gave what they could afford without any condition at all.

Mr. ABSON thought it was important that they should identify themselves with the Institute. It bade fair to be a rival to any colonial institute of its kind, and much valuable work would be carried on there, veterinary work as well as medical work; in fact, he thought the two professions would have to work hand in hand there. There were many diseases which affected both animals and men, and the two branches must go together.

Mr. J. A. W. DOLLAR said a fact which appeared to be more or less overlooked in considering the question was the manner in which their having a veterinary laboratory at the British Institute of Preventive Medicine would act. The difficulty which the College laboured under was not that they had not already sufficient places in which to work, but that unfortunately their men were not sufficiently well endowed with this world's riches to devote themselves for one, or two, or more years to the work of private research. Had it been that any endowments were promised by the British Institute, for which veterinarians might have had a chance of competing, he would have been most delighted to have supported the proposition of Professor Edgar, but that, apparently, was not so. Another point, also, which appeared to have been overlooked, viz., that although bacteriology at the present time was much thought of, and although some very astonishing work had been done, and very great advance been made, yet that bacteriology and pathology, as sciences, were not the sole means by which they might expect to make advances; and he took it that in voting away their money, they should first consider how they might best advance the interests of the profession. It might be that in the future other schemes treating of clinical observation, or some other branch of their profession, might be brought before them, and their support demanded. If at the present time they made a very large grant to this Institute, they would be more or less in danger of crippling their funds, and, when the demand was made, of being told that they had given away all that they had to give. He thought, also, that they should not lose sight of the fact that owing to the poverty of their graduates, they might bring on themselves a very serious discredit, in fact, bring themselves into ridicule and contempt, because if an expensive veterinary laboratory was set up by an unusual act of generosity on the part of the British Institute of Preventative Medicine, and it was found there were not sufficient veterinary surgeons in a position to devote themselves for two or three years to the work, their veterinary laboratory would stand in considerable danger of being left empty; and he thought, in having made proposals which were scarcely distinguished by their modesty, it would ill-become them to have the place left empty. For all those reasons he should support the motion brought forward by Mr. Wragg.

The PRESIDENT stated that he had received letters from a number of local societies, the Lancashire, the Eastern Counties, the Lincolnshire, &c., who had all promised subscriptions through the College. He had also had a letter from Dr. Rüffer, Principal of the Institute, in which he said that there would be a veterinary laboratory attached to the Institute, that it was always proposed to have such a place, that it was in the plans, and was now being built, but he hoped the veterinary profession would co-operate with them, because although even without the veterinary profession they would proceed with the veterinary laboratory they would very much prefer to have the co-operation of the veterinary profession officially.

Mr. Wragg's amendment "That the sum of £100 be given," was then put and carried.

Professor W. O. WILLIAMS said he presumed the College could grant £100 every year if they wished.

The PRESIDENT said they could, and he hoped they would.

Proposed Scholarship Grant.

Professor PENBERTHY moved "That a sum not less than £50 (fifty pounds) be granted from the funds of the Royal College of Veterinary Surgeons to provide for a Scholarship, to be given to a graduate ; such sum to be expended in study at some foreign veterinary school or schools. That the award of the Scholarship and conditions under which it be held be decided by the Council." He proposed that it should be a grant for the present year only, but if it succeeded it could be made an annual one. His view in making the proposition was to encourage study abroad. Although they sometimes thought they were the best veterinary surgeons in the world, they could hardly claim that they had the whole veterinary knowledge. The advantage of study abroad would be that clinical medicine as well as bacteriology could be studied. The result would have to be reported to the Council, so that not only would the individual be benefited by a foreign course, but the whole profession would gain an advantage.

Mr. KIDD moved a direct negative. He said it was not the first time that the scheme had been before the Council. There had been no end of motions for £50 for a bursary. No later than the last meeting a scheme was inaugurated whereby they hoped that a large sum would be raised, and that some bursary or scholarship might arise as a result. Professor Penberthy had suggested that the fortunate individual who got the £50 should spend it on the continent. It surely did the profession no credit to say that they had to go abroad to get new education, and then come back with the brand on their breasts "Made in Germany." If sufficient education could not be given to post-graduate students in Great Britain without going abroad, they must go to North Britain and get it there.

Professor W. O. WILLIAMS said that on the continent veterinary schools were endowed with very large sums of Government money, and they had many appliances which they in England had not the opportunity of getting, because they had not the money for them. Veterinary surgeons on the continent had the opportunity of being more highly educated than any veterinary surgeons in England could be, for the reason that the veterinary schools there received Government grants to assist them in educating the students.

The PRESIDENT said that if there was anything in the world in which the English veterinary surgeons surpassed all the continental veterinary surgeons, it was in their clinical, and if there was one thing in which they were weak, it was their pathological and bacteriological knowledge. The £50 was absurd on the face of it for a scholarship. He could not see any argument in favour of the £50 being spent.

Professor PENBERTHY said there was an immense amount of clinical experience to be gained on the continent.

On Professor Penberthy's motion being put to the meeting, it was lost. The meeting closed with a vote of thanks to the President.

The Examinations in Scotland.

At meetings of the Board of Examiners held in Glasgow and Edinburgh, on December 10th, for the Written Examinations, and on and between December 17th and 21st, for the Oral and Practical Examinations, the following gentlemen passed their Final Examinations, and (with the exception of Mr. D. Campbell, who will not be of age until April 4th, 1895) were admitted members of the Royal College of Veterinary Surgeons.

GLASGOW COLLEGE—

Mr. D. Brown, Kilbride, Ayr.
" J. Géman, Cardiff.
" A. Hart, Glasgow.
" D. Houstoun, Port Glasgow.
" J. Hill, Glasgow.
" J. H. Wilson, Glasgow.
" H. McCartney, Neilson, Renfrew.
" A. McDougall, Irvine.

DICK COLLEGE—

*Mr. T. J. Batty, Doncaster.
†" D. Campbell, Aberdeen.
" G. Chater, London.
" W. Hewitson, Brampton.
" H. C. Jagger, Boston.
" J. Miller, Dundee.
" D. Morrison, Rynie, Aberdeen.
" J. A. Matheson, Edinburgh.
" J. McArthur, Sligo.
" L. McLaren, Killin, Perth.
" J. McMaster, Stranraer.
" A. W. Oxenham, Aberdare.
" T. W. Rudd, Dublin.
" E. R. Sherron, Harrow.
" R. J. Stordy, Edinburgh.
" A. H. Stephenson.
" T. Smith, Coleraine.
" J. E. Young, Nantwich.

NEW COLLEGE—

Mr. P. Abson, Sheffield.
" J. P. Byrne, Cork.
" F. L. Blakemore, Atherton, Manchester.
" H. W. Deakin, Ashton-under-Lyne.
" L. Farr, Grimsby.
" S. Fenny, Durham.
" F. W. Hall, Manchester.
" J. R. Hamilton, Boyle.
" R. C. Moore, Longhurst, Northumberland.
* " W. A. Pallin, Curragh.
* " E. Plant, Holmes Chapel, Cheshire.
" C. L. Smith, Barnsley.
" G. Thornton, Bradford.

Marked thus * passed with Second Class Honours.
Marked thus † passed with First Class Honours.

NEW COLLEGE—*continued.*

„ A. Waller, Brighouse, Yorks.
„ W. Webster, Preston.
„ J. H. Wright, Salop.
„ J. H. Yates, Liverpool.

The following gentlemen passed their Second Examination :—

GLASGOW COLLEGE—

*Mr. J. Brown
* „ W. N. Campbell
„ R. McDonnell
† „ H. MacVean
* „ J. McLean
†Mr. R. Mitchell
„ W. Neilston
* „ A. B. Sullivan
† „ G. Thompson

DICK COLLEGE—

Mr. W. V. Allan
„ W. T. Aulton
„ R. Barker
* „ M. Bray
* „ R. C. Brayne
„ J. Caldwell
* „ W. H. Campbell
* „ J. H. Carr
* „ H. Conyngham
„ W. T. Casewell
†Mr. P. M. Edgar
„ J. C. Heather
* „ S. W. Haffield
† „ W. Russell
* „ H. W. Robson
* „ T. H. Sherlock
* „ W. Scott
* „ A. Sellers
„ A. C. Smart
* „ J. Walker

NEW COLLEGE—

*Mr. G. C. Baker
„ J. Bibby
* „ J. Brittlebank
„ H. Cameron
* „ J. Duff
* „ A. Ferens
*Mr. B. Holmes
* „ W. F. Hughes
† „ J. Kenyon
* „ J. Lyons
* „ T. Ryan
* „ J. M. Walker

The following gentlemen passed their First Examination :—

GLASGOW COLLEGE—

Mr. J. W. Conchie
„ J. C. Erskine
„ J. Forwell
„ A. Fraser
Mr. P. McKinlay
„ R. Peddie
„ R. Porteous

DICK COLLEGE—

Mr. J. Atkins
„ R. C. Baxter
„ A. G. Blackwood
„ W. J. Cofley
„ J. Dalrymple
„ J. Dixon
„ T. Boyle
„ C. Farrar
Mr. E. Lander
„ T. Loughran
„ A. G. McGown
„ F. Moore
* „ J. O'Brien
„ E. C. Orton
„ A. F. S. Jackson

NEW COLLEGE—

Mr. G. Barras
„ J. C. Blake
„ H. Briggs
Mr. H. Brittain
„ J. S. Drabble
„ J. Knowles

Marked thus * passed with Second Class Honours.
Marked thus † passed with First Class Honours.

R. RUTHERFORD, F.R.C.V.S.,
Secretary to the Board of Examiners.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

(*Continued from page* 56.)

KOZOUREK considered slaughter the best method of dealing with the disease, but inoculation might be tried in fat cattle. As he thinks it possible to carry over the disease by inoculation he condemns that system in working, breeding, or milch cattle. Professor Nocard, however, thinks the suggestion somewhat doubtful.

Professor Schütz, who had been announced to speak, was unavoidably absent.

Professor Hutyra spoke on preventive inoculation against anthrax and swine erysipelas. He showed by the official reports of the Hungarian state veterinary surgeons that these inoculations had been extraordinarily successful, not only involving fewer deaths than in Germany and Switzerland but even fewer than in France. During the discussion Hess stated that in Switzerland inoculation against swine erysipelas was often followed by endocarditis and interference with growth.

Professor G. Piana of Milan sent some notes of inoculations he had practised with pure cultures of swine erysipelas, obtained in the first place from pigeons which had been inoculated from pigs dead of "rouget," and with an emulsion of spleen pulp from pigs and rabbits dead of the disease. The results were very successful, but I need not here enter into statistics. The method is of course only to be recommended where the "vaccin" is unobtainable.

Wednesday was taken up with a discussion on the organisation of meat inspection in which both the 7th and 17th sections took part.

Professor Czokor of Vienna referred to the necessity for general and obligatory meat inspection. Great strides were being made in this direction. Naked-eye inspection, once considered ample, was no longer sufficient, and recent advances in histology and bacteriology were being utilised in the examination of meat for human consumption.

Fein alluded to the necessity for compelling all animals to be slaughtered in public abattoirs where an examination could be made by a competent veterinary surgeon both before and after slaughter. Meat from foreign parts should only be admitted with a written declaration from the local meat inspectors, whilst condemned meat ought to be rendered harmless by boiling or otherwise. Statistics should be kept showing the number and variety of diseases discovered, with all other desirable factors.

The meeting finally approved the following resolutions:—

1. Every animal destined for human food should be examined by an expert both before and after slaughter.

2. The term expert is understood to mean veterinary surgeon, though in occasional instances, laymen with limited powers might be substituted.

3. To carry out obligatory meat inspection, it is absolutely necessary to erect public slaughter-houses in the more important districts. and an attempt should be made in the same direction even in small communities.

4. To promote uniformity in meat inspection, special laws are required to regulate the cattle traffic, and exact directions for its conduct must be laid down. The disposal of meat from diseased animals should be under the control of the Minister of Agriculture, who should formulate regulations in accordance with the progress of veterinary science.

The rest of Wednesday was given up to questions relating to the preservation and cooking of meats and similar foods.

On Thursday none of the sections sat, a very large number of excursions having been planned to places of interest in and about Budapest.

The morning of Friday was devoted to mallein. Professor Nocard opened

the proceedings with a very able paper, part of which I have already reported in the *Veterinarian* for November. As, however, that report contains a sentence capable of double interpretation I will briefly recapitulate the principal points. Professor Nocard gave the usual warning against employing mallein when the subject is feverish, suffering from cold or other disease, or exposed to extremes of heat or cold, and went on to describe the local and general reactions. The most interesting portion of his discourse had reference to the practical treatment of cases suspected of or actually suffering from glanders. He advises that all horses in infected stables should be injected. but deprecates the immediate slaughter of all which react, and suggests rather that where the animal shows no clinical signs of glanders we should content ourselves with rigorously isolating it, marking it conspicuously, and making every month an injection of mallein. During the course of several months some horses will show clinical signs of glanders. These should be at once destroyed. On the other hand, it will happen that a certain subject will resist the inoculation—will show no local reaction nor rise in temperature. Should such resistance be maintained and no reaction follow the next monthly inoculation, Professor Nocard states that the animal in question may be returned to its place in the stable without fear. By the adoption of this system the stable is finally rid of the disease, whilst the local rates are relieved from payment of unnecessary compensation.

Dr. Preysz was the next essayist. He gave the results of his experience since 1892 when mallein was first introduced into Hungary. In all he had studied 486 cases and made 126 *post-mortems*. Of these 126 horses, 22 had shown a rise in temperature of 1·5 C. Eight proved glandered, 1 seemed suspicious, and 13 were not glandered. Fourteen showed a rise of 1·5 to 2 C. inclusive. All proved glandered. Eighty-eight showed a rise of over 2 C. Of these 83 were discovered to be glandered and 5 were doubtful, but of these five one had shown an incomplete reaction and four were not examined after death, so that the presence of glanders is not impossible. Preysz therefore concludes that a rise of more than one and a half degrees centigrade is required to decide the case as glandered, and where no confirmatory clinical evidence is present the case should not be condemned unless showing a rise of two degrees or more. The temperature begins to increase in from four to six hours and reaches a maximum in the 8th to 14th or 16th to 20th hours. Preysz sets less value on the local swelling, rigors and dulness than on the fever. Where external glanderous lesions exist the *post-mortem* examination often shows small fresh centres in the lungs, etc., alongside of older growths. These he regards as due to metastasis. Though the reaction becomes less after repeated injections Preysz does not consider that recovery occurs.

Professor Semmer gave an account of the use of mallein in Russia. During 1893 about 11,000 doses were prepared in the Imperial Institute for experimental medicine in St. Petersburgh and sent to all parts of Russia, where no other is used by the officials. His experience had been that mallein seldom failed or gave false results. Most glandered horses showed 2° to 3·4° C. of fever, and a large local swelling. The temperature sometimes falls slightly soon after the injection. The slightest recorded cases of temperature in glandered horses were 7° C. and 1·2° C. respectively. Healthy horses showed fleeting elevations of temperature of ·1° C. up to 1·1° C. accompanied by temporary local swelling, He considered the healing and immunising power of mallein to be very slight and by no means constant. Since the 20th March, 1894, the use of mallein in the Russian army has been made obligatory, but microscopic, bacteriological and inoculation proofs are also ordered to be made at the same time.

Professor Csokor of Vienna stated during the discussion that the small semi-transparent centres resembling frog's spawn which are often found in the

lungs are nothing more than emboli. He also reminded the meeting that Löeffler and Schütz had discovered another bacillus which gave the same kind of brown cultures on potato as glanders, and that the only conclusive test for glanders was that of inoculation.

Professor Ostertag pointed out that the calcareous nodules often found in the lung may sometimes be due to echinococci, and that in Vorpommern 70 per cent. of horses have been found to suffer from echinococcus disease. Echinococcus nodules may be distinguished from glanders centres by the fact that they are never accompanied by ulcers or cicatrices in the mucous membrane.

Lastly came Professor Nocard, who declared himself assured that the small, pin-head-like, translucent pulmonary centres only occur in animals which have been exposed to glanders infection. They are never seen in healthy horses. By feeding with chaff moistened with virulent glanders cultures similar centres are produced in from three to seven days. The animals then react to mallein, and a *post-mortem* shows the presence of these centres in the lungs. The centres always contain glanders bacilli, and even though inoculation experiments fail, cultures will reveal their presence. Nocard does not consider that mallein can altogether displace other means of diagnosis, but it is a most valuable addition to them, and he finds its greatest advantage in the fact that it allows the healthy horses to be sorted out from an infected stud, and obviates the necessity for isolating the entire establishment.

The work of the week, which I have endeavoured to very shortly sketch, ended with Friday. Saturday was devoted to general questions of hygiene, but not such as present an immediate interest for this meeting.

Many other things we saw, however, such as the magnificent estate of Count Esterhazy, at Totis, the great pig-fattening establishments at Budapest, the Veterinary School in the Rottenbillergasse, the vast roller flour mills, whence comes the far-famed Hungarian flour, the exhibit of the Fire Brigade of Budapest, and the great demonstration by that body, in which some two hundred men took part, and showed the practical use of their equipment. Invitations to dinner, to the breweries, slaughter-houses, baths, wine cellars, athletic competitions, and every form of entertainment were freely distributed, and many of the theatres gave gratuitous performances. These I could tell you of if I have not already overtried your patience; but perhaps I had better confine myself to a short description of our visit to Totis, and to the pig-fattening establishment.

The excursion to Count Esterhazy's estate at Totis was planned for Thursday when no meetings took place. The guests assembled at the central railway station at 8 a.m., and were conveyed by special first-class train to Totis, reaching there at 9 a.m. For the convenience of the party the train stopped immediately before the castle, where we were received by Count Esterhazy in person who gave us a very warm welcome. My brother and myself were sufficiently lucky to secure a private introduction to the Count through the medium of Mr. Waugh who holds a very responsible position on the estate. Breakfast was at once served, after which the grounds were thrown open to the guests. The palace at Totis stands on a strongly-fortified island, about half a square mile in extent, lying near the upper end of a large lake. Though often besieged it has never been taken. Until about 1850 Count Esterhazy maintained a large body of troops of his own, and the veterans still do duty as sentinels at the entrance to the castle and at various points in the palace. Passing from the breakfast-room into the courtyard of the castle we were attracted by the howling of some wolves which had been captured in pitfalls and are now kept as curiosities. Close to them is a den containing several Hungarian bears. Leaving these we went to inspect the fox-hounds and harriers of which Count Esterhazy has two packs. A curious fact about the fox-hounds is that they have to be continually replaced from

England, as not only do they degenerate physically, but they lose their power of scent. The stables adjoin the kennels, and, as is usual in Hungarian noblemen's establishments, consist of a long building paved with brick, divided off into immense loose boxes, and with a lofty, open, oak-timbered roof. A broad passage extends the entire length of the stable, and at the centre broadens out so as to form a space abont 20 ft. square, on one side of which is a large open fireplace, and seats and tables for the men on duty. Most of the grooms are English, the Count's confidential servant is English, and altogether the stable department is a little English colony. I need not say that everything was scrupulously clean, brass like gold, horses in the pink of condition, and not a straw out of place. An inspection of the grounds, &c., occupied us until lunch, which was served in the winter garden—a great green-house about 70 ft. square and 30 ft. high, roofed with glass, and filled with beautiful palms and semi-tropical plants. Wine from the Count's own vineyard was supplied freely, and everyone did full justice to a very bounteous meal. About 1 p.m. we set out to see the race-course, young thoroughbred stock, cattle and buffaloes; and when I tell you that the company filled sixty carriages, some with four horses, and none with less than two, and that these were all the property of the Count, it may give an idea of the princely style in which the entertainment was framed. The Count has a stock of about one hundred and twenty yearlings and two year olds, some of great promise, and all descended from English sires, many of which have distinguished themselves on our own race-courses. From the stud we were driven to the wine-cellars, excavated to a great depth in the face of a limestone hill. A band of the famed Hungarian gipsy musicians was awaiting our arrival, and played a large selection of their more celebrated pieces whilst the guests wandered freely through the vineyards or tested the quality of their produce in the cellars. Some of the Hungarian wines are magnificent, the red wines being of full body, smooth, and carefully prepared. It is tantalising to be told that red wines of the best qnality which would cost 5s. or 6s. per bottle in this country can be bought for 50 kreuzer, or less than 1s., in Hungary. We entered the cellars, which are of vast extent, and climbed to the top of the great tun, nearly twenty feet from the ground. This used to hold the annual contribution of wine from the tenants on the estate, and is said to have a capacity of 187,000 litres, or nearly as much as the famous Heidelburg tun. Emerging from the cellars, we again entered our carriages, and were taken back to the castle to view a performance in the Count's private theatre. Immediately at the close of this dinner was served—toasts were drunk to our host, and speeches made by members of the different nationalities present. By nine o'clock all the guests were conveyed back to the station, where a special train was awaiting them, and at 11 p.m. Budapest was safely arrived at.

Our visit to the pig-fattening establishment was more interesting from a professional point of view. Though this is only one of several in the neighbourhood of Budapest, it seldom contains less than 200,000 pigs at one time. We were driven thither in cabs provided gratuitously by the Congress, and found the place decorated with flags, and surrounded by a motley and picturesque crowd of Servian, Roumanian, and Hungarian swineherds, all in native costume, and in many cases accompanied by their wives. They seemed to find us quite as interesting as we found them. The first remark made by most of the company was, "How little smell there is!" Considering the close proximity of 200,000 pigs, the absence of smell was wonderful. The directors of the limited company which manages this great porcine town were waiting to welcome us, and immediately after shaking hands and entering our names in a very handsome book kept for the purpose, we were marshalled into the receiving department.

This comprises a number of pens, communicating on one side with with railway sidings, and on the other with inspection yards. The pigs, which come from Roumania, Servia, and all parts of Hungary, arrive in great double-decked railway-carriages, from which they descend by elevated platforms and inclined planes, and are driven into one of the receiving pens. From here they pass one by one to the inspecting pens, where the veterinary surgeons await them. A stalwart attendant keeps the door, and only allows one pig to enter at a time. As the animal rushes in, a second attendant, with a degree of dexterity born of long practice, grasps him by his furthest away quarter, and throws him down. The pig squeals furiously, and struggles to right himself, but before he can get up sufficient momentum to roll over, the man kneels on his exposed shoulder, thrusts a stick, about 30 inches long, into his open mouth, and, resting its end on the ground, uses it as a lever to turn the pig's head upwards and backwards, until it comes to rest nearly over his (the pig's) shoulder. Thus fixed he can neither squeal nor bite. Another man at once comes forward, inserts his left hand into the pig's mouth, and draws forward his tongue which he grasps with a piece of flannel held in his right hand. The veterinary snrgeon then comes on the scene, and taking the pig's tongue in one hand examines it and the frænum linguæ for swellings which would indicate the presence of Cysticerci, at the same time he looks for signs of foot-and-mouth disease. If "measly" the pig is condemned and slaughtered—if approved he goes forward to the quarantine pens, where he must pass a period of one to two months before mingling with the other stock. For some time the pigs are fed on whole maize but as they become fatter a diet of ground maize and barley meal made into mash is substituted. The animals are housed in long open sheds roofed with tiles and about 4 ft. high at the eaves, 6 ft. at the ridge. These sheds are divided off into sections by cross walls, and each has an open yard some 20 ft. square in front, provided with feeding troughs and a shallow bath. Many of the animals seemed to take up their residence permanently in this bath, and it was surprisIng how clean they appeared and how free from insect torments. The yards are paved with brick and covered six inches thick with sand. Walking round we noted the mill where the maize and barley are ground and learned something of the system adopted. The establishment is the property of a limited company which also owns most of the stock, but private owners can send their pigs here to be fattened or can hire pens and provide their own food. The average price of fat pigs at the time of our visit was from 41½ to 44 Kreuzer per kilo, nett weight, but prices vary with the various kinds, viz., native Hungarian, Servian or Roumanian and with the size. Maize and barley are about six florins, 20 Kreuzer per 100 kilos.

The daily account is interesting:—

Stock on 31st August, 1893			184,147
Arrivals from Inland	12,527		
„ „ Servia	5,802		
„ „ Roumania nil		18,329	
			202,476
Deliveries to Budapest	4,640		
„ „ Inland	1,506		
„ „ Vienna	696		
„ „ Austria generally	2,728		
„ „ Germany	9,468		
„ „ Soap factory	94	19,132	
Remaining stock			183,344

Large numbers are sent to Vienna, Dresden, and Berlin.

The tour of inspection was brought to a close by a bountiful lunch; a few speeches were made, compliments exchanged with the directors, and seeking our cabs once more, we were soon whirled back to our respective hotels. Many other places we visited, and did time permit I could describe to you the various novelties we saw. I fear, however, I have already trespassed too far on your patience and good humour, and, therefore, whilst thanking you for the kindness with which you have heard me I gladly allow the curtain to descend on this veracious history of the doings of your delegate at Budapest.

Mr. HURNDALL: I take it that a report of this description does not come under the category of one that should be subjected to any criticism. Therefore, I do not think we can do better than acknowledge our indebtedness to Mr. Dollar, who has proved so able a delegate on our behalf. With his natural modesty, he referred to reasons for his selection as our delegate which may have struck him, but which never struck anyone who mentioned his name in connection with this International Congress. I am sure, without speaking in a derogatory manner of the other members of this Society, no one was so well qualified to represent it at the Congress. Without taking into account any other of his qualifications, we must all recognise his great linguistic ability. Personally, I feel that we are very much indebted to him for the interesting account of the proceedings which he has given us. It was only such a report as we anticipated from him, because we all know what his abilities are. I take it that I am not out of order in proposing that our hearty thanks be accorded to Mr. Dollar for his services as our delegate, and for the able, careful, and interesting report with which he has supplied us of the Congress proceedings.

Mr. O. E. REDDISH seconded the motion, which was carried unanimously.

Mr. DOLLAR, in thanking the meeting for the compliment, disclaimed that there was any special merit in his report or that the document might not have been written by any of his fellow-members.

The Next Meeting.

In reply to Mr. Edgar, the CHAIRMAN announced that at the next meeting of the Society in January, Vet.-Capt. Butler would read a paper on "The Legal aspect of Soundness" and the discussion on the paper would be opened by Professor Penberthy.

The proceedings then terminated.

YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

(*Continued from page* 48.)

THE symptoms of anthrax are, I fear, often regarded as of little practical importance. It is usually said that the V.S. is called to see an animal which is dead before he arrives; and we have come to regard our function as simply that of making a *post-mortem*, and declaring the existence or non-existence of disease. I allow that often the practitioner does find his patient dead on arrival, but I think, under ordinary conditions, it is not uncommon for him to be called, after no long interval, to find a similar state of affairs, for which he was as unprepared as his client. In connection with the clinical aspect of anthrax, I think two assumptions have conduced to this. These assumptions, which I believe are unwarranted, depend on the view that anthrax is always fatal, and that there are no early signs of the disease. That both are wrong, my experience has amply proved. In the first place, I have known many animals recover; and in the second, I have found with an animal in apparent health, the temperature very high some time before death. It cannot be doubted that in this country, in the majority of instances, we are

called to the case of an animal which has been observed to die suddenly, or to have been found dead. Occasionally, however, there is time for the veterinary surgeon to see affected animals alive. This may occur under two conditions, the one in which an animal has been noticed by owner or attendant to be unwell before his arrival; the other comes under his observation on inspecting a herd, of whose number one or more have previously died.

During the incubation of the disease, from 30 to 40 hours after reception of the virus, there is little to be noticed saving a rise of temperature, usually ranging from 104 to 108 F. Rigors and muscular twitching are often present, restlessness, excitement are noticed in some instances, usually depression is evident. The appetite is occasionally maintained within a few hours of death. The respiratory acts are generally excessive, and sometimes in cattle associated with grunting. These may be noticed in all manifestations of anthrax, but other symptoms arise in relation to the parts specially affected. Swelling of the throat, etc., in pigs and horses, is the rule, and sometimes in dogs. In affections of the spleen and intestines, the extremities are cold, colicky pains are sometimes manifested, and blood and mucus, which contain bacilli, are passed by anus, nostrils and mouth. The urine may also contain blood and the bacillus. Symptoms like those of cerebral apoplexy and convulsions may be predominant. Sheep sometimes leap into the air, fall and exercise convulsive movements with their limbs. The visible mucous membranes manifest the de-oxygenated condition of the blood, and are said to often show signs of hæmorrhage. I have rarely observed these latter. I am, however, disposed to the view that without a history of existence of the disease, or microscopic examination of the excreta of the living, or the carcase of the dead, we have no means of certainly diagnosing anthrax. The examination of blood taken during life has not proved satisfactory; the bacilli in many cases have not been found in the superficial vessels within two or three hours of death.

The differential diagnosis of the disease is, however, an important matter, and in order to make perfectly sure, it is necessary to demonstrate the micro-organism. We have referred to the characteristics of the bacillus. Those of malignant œdema black quarter are easily distinguished in simple slide. Anthrax is a contagious disease easily communicated to other small animals, and, by inoculation, is thus easily distinguished from mineral or vegetable poisoning. Though, in the majority of cases of splenic apoplexy, the gross changes at *post-mortem* will convince the experienced practitioner, when any doubt exists the question must be settled by microscopic examination, culture, or inoculation experiment.

In dealing with anthrax, the veterinary surgeon is not only concerned with the affected, but with the healthy—with the present existence of the disease, and its prevention in future. His first case will probably involve *post-mortem* examination. It is unnecessary here to say this entails consideration for his person, and the use of measures for preventing the spread of the virus. It is of primary importance to use all means to discover the source of the virus, a task often very tedious and unsuccessful. When we realise how easy it is for a micro-organism such as the bacillus or spore of anthrax—which latter lives for indefinite periods outside the body of the affected animal—to be conveyed to healthy animals, we must be convinced of the difficulties which surround this part of the subject. Corn, cake, hay, grass, green-crops, malt, water, flies, dogs, birds, earthworms, attendants, horses—in fact, anything having substance may serve as a medium. We may, however, occasionally be able to trace the poison to a pasture, a shed or pond, a certain article of diet. It will always be well to investigate a case, so as to discover a possible connection with any special diet or situation, and under any circumstances, when the origin is not discovered, to try a complete change of diet and

situation. The difficulties here are not easily overcome. If a pasture is contaminated, it is often impossible to determine the exact spot from which the virus is derived, and, as all herbivorous animals are susceptible, the task of dealing with the field is almost hopeless. Old graves may be searched for and fenced off; but frequently their situation cannot be found. This contamination of soil proves to the practitioner a source of great difficulty in giving advice to clients. The ploughing of old pastures is often impracticable, and associated with it is always the danger arising from the chance of bringing up spores lying beneath the surface. I have, however, known the adoption of this means successful in rendering notorious pastures harmless.

In this dilemma, we now naturally ask ourselves—can the animals of the farm be protected so as to render their grazing on such pastures safe? The exponents of protective inoculation in foreign countries answer in the affirmative. About twelve years since, Pasteur introduced a system which appears, from statistics, to have had a wonderful effect in reducing the losses from anthrax in France and elsewhere. The number of animals inoculated may be counted by millions, and the reported decrease of mortality is immense. My own experience has certainly been very favourable. It is important to remember that this vaccine contains the living anthrax bacilli, though it is claimed that they are attenuated by cultivation under special circumstances of temperature, etc. From Pasteur's public experiments, my own, and the statistics referred to, there is little doubt in my mind that a degree of immunity is conferred. This is stated to last about twelve months. In considering this, we must take a practical view. Under natural conditions, it is not likely that an animal will ingest large quantities of anthrax bacilli or spores at a given time, so that we must be careful in drawing conclusions from laboratory experiments in which cultures containing immense numbers of bacilli and spores have been introduced at once into the systems of vaccinated animals in order to test the effects of vaccination. The great apparent objections to this plan of inoculation depend on the fact that in certain cases, which, happily, have been very rare, several deaths, especially of sheep, have followed very soon after the inoculation, and appear to result from it. This erratic behaviour of the vaccine has not been satisfactorily explained, though it may have some connection with recrudescence of the virus, owing to carelessness of the veterinary surgeon or in the manufacture. I have used Pasteur's vaccine on several hundreds of cattle and horses without harmful results; but I think it advisable, before undertaking the operation, to inform the clients, and state fairly the case.

There are further means of preventing recurrence of anthrax which depend on our knowledge of the life-history of the bacillus and spore, and their relation to the carcase, etc. *Post-mortem* examination involving opening the animal should only be carried out when absolutely necessary. This can very rarely be the case. It is important to remember that putrefaction will soon render the case inert, and if it can be buried intact where it is found, after the excretion and discharges have been subjected to disinfection, as by crude carbolic acid, vitriol, etc., no danger need be feared. There is, however, no law to prevent a *post mortem* examination, and should this be decided on, the greatest care should be observed and precaution given to anyone engaged in the operation. The hands and arms of any servant employed to skin or cut up the carcase should be examined, and if any chaps, cuts or abrasions exist such an one should not be allowed to assist at the operation. If it is found necessary to cart or drag the carcase to a suitable spot for burial, means should be adopted to prevent the escape of blood, etc., from the mouth, nostrils, or anus; carts, tools, etc., should be immediately disinfected. Burning the carcase would of course be effectual in killing the virus if the carcase could be placed bodily into a crematorium, but in the great majority of cases it would

be necessary to cut it up before burning, a plan not free from danger of contaminating the situation. It would prove a very useful rule that no carcase of an animal dying suddenly and mysteriously should be opened except by a veterinary surgeon. It is my opinion that the improper treatment of such carcases is liable for the existence of this disease in an enzootic form.

If we are not able to satisfy ourselves as to diagnosis without microscopic research, and this is often necessary, blood for examination should be taken from superficial vessels, and care taken that no more is spilt than is necessary for an examination. We have seen that putrefaction is most likely to be fullest advanced and consequently the bacilli fewer in the internal organs. Should it be desired to send any part for expert examination, the part suggested by Professor McFadyean—an ear or hoof—would be quite sufficient, and probably more satisfactory than portions of the spleen, which is early affected by putrefaction change. Any spilt blood should then be disinfected with strong carbolic or sulphuric acid, also blood passed by the anus, and spume from mouth and nostrils. If death occurred indoors, manure, straw, etc., should be burnt and the place disinfected. The carcase then must be buried according to the law. The lime which is ordered probably may be useful in destroying any virus which may escape from the animal, but otherwise it is unnecessary, and if it retards the process of putrefaction cannot be said to be of much value as regards the infected carcase. This being done there is little to be feared from that cadaver.

Hay is regarded by some to be less likely to convey the virus than grass fed off. Only one instance have I been able to apparently trace ill-effect to hay, though I have had under observation several fields grazing on which was fatal to the cattle.

Cakes are often accused of causing anthrax. I do not know of any positive evidence on this point, but if anyone would demonstrate the presence of the bacillus anthracis in cake, it would be decisive for that case. I have known several instances in which, when cake has been stopped that the disease has ceased, but on this account we may not attach the blame to the cake, for the common experience is that in the majority of cases only a few animals succumb, and that when more than one dies, death often follows closely on each other. Possible contamination from woollen, bone manufactories may not be lost sight of.

Slaughter of in contact animals is only called for in most exceptional instances. The advisability of slaughtering animals is not so clear to me as it would appear to be to some. A writer has recently stated that all animals having a temperature of 105 should be dealt with as infected animals and destroyed. If it were a fact that every case of anthrax were fatal, or even that during the attack an animal was liable to spread the disease, as in pleuro-pneumonia, cattle-plague, or foot-and-mouth disease, this would probably be the correct course to adopt. But we know such is not the case.

The Professor narrated the circumstances of an outbreak occurring six years ago, in which four animals, including a bull worth about £500 and a steer which took a prize at the following Smithfield Market, recovered after indicating temperatures of from 106 to 108. The utmost precautions were taken as to destruction of litter, disinfection, and as a matter of fact no animal on this farm has been affected since. To have destroyed these evidently affected animals would have entailed serious loss and have done no good.

Having satisfied ourselves of the existence of anthrax and considered the mode of infection, our next care will be to separate the healthy from the diseased. This can only be done by aid of the thermometer. It is important that, as some will probably succumb and that all will discharge the virus by fæces, urine or other excreta, they should be kept in some place that can be disinfected. Such agents as alcohol, quinine, carbolic acid, iodine, perchloride

of iron, mineral acids, small doses of corrosive sublimate may be administered internally. Should there be any evidence of an external seat of inoculation this may be excised, or incised and cauterised with the hot iron or strong antiseptics, as pure carbolic acid. Hyposulphits of soda is much estimated by some, but I have been unable to observe its curative effect. Bleeding should be eschewed. Spontaneous recovery is by no means rare.

It is not necessary to speak of the danger to man of flesh from animals affected with anthrax.

I stated at the commencement of this paper that it would be difficult to say anything new to this Association concerning anthrax. I think there has been a disposition to regard it as a comparatively new disease, altogether fatal, impossible to diagnose during life, and after death marked by generally distributed extravasations, and that an abrasion or wound is essential to the entrance of the virus. Some have thought it necessary to slaughter in contact as well as infected animals. My views on these and other points have perhaps differed from those of others who have recently expressed their opinions. I now conclude my remarks as I commenced them—in anticipation of gaining from expression of your experiences.

Discussion.

The PRESIDENT: I am sure we are all extremely indebted to Professor Penberthy for the very able address he has given us on anthrax. We have had a good many cases of this disease in the different Ridings, and I thought it would be interesting to all of us if Professor Penberthy would address us upon this subject. This disease is of special importance to stock-owners. You will observe that the Professor repeats the advice we have previously heard, that the best way to treat an animal which has died from anthrax is to let the carcase alone and not open it. Personally, I cannot speak with any great degree of knowledge of anthrax in this country. I have had many cases of it in India where it is known by the name of Loodianah Disease. The high temperature has been referred to, the colicky pains, and swollen necks. I have noticed a discharge from the nostrils, and in some cases from the eyes. It is of a more lasting character, and in some cases continues some length of time. It was always a mystery to the veterinary officers how the animals had become inoculated. Sometimes we were of opinion that small sandgalls being brought from the flies settling on these animals from the neighbouring compounds of native cattle. I was most interested in the attempt to prove that it can come by ingestion. I was struck with what the Professor said with regard to colic and anthrax, when he spoke of these deep citron purple-coloured swellings in the intestines. We found those in cases of horses that died from colic in India. You may remember in my presidential address I called attention to the waste of the ratepayers' money by the destruction of animals which had been in contact with those which had died from anthrax. I said at the time it was totally unnecessary to destroy such animals. I suppose that we are such a wealthy nation that we can go on destroying these good animals. I must thank the Professor for coming here as a personal friend of mine, and also on your behalf for the long, exhaustive, and interesting and scientific work he has placed before us to-day.

Mr. COOKE: There is only one thing I should like to say with regard to this paper. The Professor sticks to the analogy between the symptoms of animals afflicted with anthrax and those fed on a certain line. I believe I have remarked it before at these meetings. Some time ago I attended some animals under twelve months old showing symptoms of anthrax. The veterinary surgeon in attendance was suspicious it was anthrax, and each and every symptom pointed to the conclusion that he was right. On making further inquiries, I found the animals had been fed on cotton cake. I don't

think it is any uncommon thing for animals to show these symptoms if fed on this material. I don't think it is a suitable food for young stock.

Mr. CARTER expressed the pleasure it had given him to listen to this paper, and said, in his experience of anthrax, he had always found a swelling in the throat.

Mr. COLLINS: Supposing a country practitioner was called out to a case without knowing the history, and when he arrived he found it dead. What would his mode of procedure be, having no suspicion, as to making a microscopic examination or a *post-mortem*.

Professor PENBERTHY: Cut off one ear and put it in your pocket, and examine the blood microscopically.

Mr. SOMERS: We have had in Leeds, within the past week, a case of wool-sorters' disease for the first time. The man had been sorting Australian wool. He died in three days.

Mr. THOMPSON: I had an outbreak at a farm some few days ago. In the first case there was high temperature (close upon 107), swelling about the throat, and great difficulty in breathing; oozing of blood from the nostrils; dark-coloured fæces, tinged with blood. She died three or four days after I saw her. The following morning I noticed another going wrong; she was dead within four hours. The third was about the same as the first, and there was nothing special about the other three. None of the lot lived above eight hours, the average being about four and a-half to five hours. There had been no fresh stock brought on the premises for eight or nine months. No fresh feeding stuff or fodder; in fact, nothing fresh except some artificial manure last May, and I have reasons for thinking some of the materials it contained consisted of animal refuse imported from Egypt, and this might have caused the disease. A *post-mortem* examination was made in one case, and it showed the clearest indications of anthrax. Two animals had very high temperature, and they recovered without any treatment whatever. The animals were eating nothing but grass.

Professor PENBERTHY: It seems to me there is very little to reply to. Mr. Thompson tells you that two of his cases recovered; that is about my general experience. Anthrax is not an absolutely fatal disease. With regard to manure, I have known instances where broken bones have caused laceration, which has been the means of the inoculation of the subject. The duration of the disease, he tells us, was about four hours. Possibly, had he been called in two days before, he would have found the temperature of the animals that died very high. The case of wool-sorters' disease which had been referred to is very interesting, especially as it is the first case which has occurred in Leeds. With regard to Mr. Cooke's remarks, I am disposed to the view that cotton-cake occasionally carries with it some poison. It is not unusual to find nine-month-old cattle dying from eating cotton-cake. I was very glad to hear Mr. Mason's remarks about anthrax in India. It is possible that the horses had got inoculated with spores.

The proceedings then terminated.

BORDER COUNTIES VETERINARY MEDICAL SOCIETY.

THE general meeting of this Society was held at the Bush Hotel, Carlisle, on Friday. Mr. Pears, Penrith, the President, occupied the chair, and there were also present Mr. W. Awde, Stockton-on-Tees (who was announced for a paper on "The Veterinary Profession: Its Present Position and Future Prospects"); Mr. Carlisle, Mr. J. J. Bell, Carlisle; Mr. Howe, Keswick; Mr. McIntosh, Dumfries; Mr. H. Thompson, Aspatria; Mr. Garnett, Windermere; Mr. Hewson, Mr. McKie, Carlisle; Mr. Soulsby, Cockermouth; Mr. Little, Abbey Town, and Mr. J. Armstrong, Penrith, hon. secretary.

The SECRETARY read a letter from Mr. Greaves, apologising for non-attendance, and expressing to this Society the good financial position of the Mutual Benevolent and Defence Society, and asking to enrol members.

Mr. BELL thought the Society was a very good thing, and said if he had to start life over again he would certainly become a member once more. It was a serious matter for a man to fight a case unless he had private means, and he thought the Society was a very good thing for all young men.

Mr. THOMPSON said it was a great advantage for young men to have a society like that at their back.

The late Professor Walley.

Mr. ARMSTRONG moved that a letter of condolence, drawn up in the usual way on parchment and framed, be sent from the Society to Mrs. Walley and family on the death of Professor Walley, which occurred a few days ago. It needed no words from him to say how great an ornament the Professor was to his profession.

Mr. BELL seconded the motion, and said it was the least they could do to send such an expression of their feeling in the matter to the widow and family of the deceased Professor. He had stood very high in his profession, and was also a great friend to the Society.

Mr. THOMPSON supported the motion, and said the members would call to mind that Professor Walley gave the Society a paper on "Anthrax" at their last meeting. He was not looking well then, and he had gone down gradually ever since. He would be a great loss in the profession, and all would hear the news with the deepest regret.

Mr. AWDE said the profession had lost a real good man by his death, and the students, particularly of Dick's College, a good friend. He had the welfare of each individual student at heart, and he was always ready to put his services forward, and to the best interests of the profession, which had now lost one of its brightest ornaments.

Mr. HOWE said Professor Walley was at College when he was there, and he felt his death almost as that of a near relation. He was ready to give advice whenever asked, and no doubt he would be very much missed.

The PRESIDENT said he endorsed everything that had been said; and they would all be unanimous in sending the vote of condolence to the widow and family of the late Professor.

The motion was then agreed to.

New Member.

Mr. ARMSTRONG nominated Mr. Threlkeld as a member of the Society, and Mr. H. THOMPSON seconded the motion.

The New President.—The Retiring Secretary.

The PRESIDENT intimated that he desired to nominate as his successor in the office, Mr. Soulsby, of Cockermouth.

Mr. ARMSTRONG seconded the nomination.

Mr. THOMPSON said he was not aware whether any steps had been taken in this matter, but he wished to point out that the Secretary, Mr. Armstrong, after nine years' service, had decided to retire, and he thought the least they could do as a Society was to appoint him president for the ensuing year. It was the smallest recompense they could give him. He would propose that Mr. Armstrong be the president for the year.

Mr. ARMSTRONG said that he had had nine years' intimate connection with the Society and its affairs, and he would certainly for a year or so remain quiet. He had only missed half a meeting during that time, and he would rather have a little liberty for a short time. He thanked the meeting kindly for their feeling towards him.

It was then agreed that Mr. Soulsby be the President for the next year.

Mr. SOULSBY expressed his thanks to the meeting, and observed that hitherto he had been a delinquent in regard to the attendances, but it was owing to circumstances over which he had no control.

On the motion of Mr. BELL, Mr. Pears was placed on the list of Vice-Presidents, and Mr. Armstrong was also added to the list. Mr. Thompson was re-nominated Treasurer, and Mr. Hewson was appointed to the office of Secretary in succession to Mr. Armstrong.

In moving the acceptance of the resignation of the latter, Mr. Thompson observed that Mr. Armstrong had worked very hard for the Society. The post was not a very nice one, and he had a lot of work to do, and got "more bats than ha'pence." They accepted his resignation with great regret, and he proposed a hearty vote of thanks to him, and hoped it would not be long before he assumed the presidency.

In reply, Mr. ARMSTRONG pointed out that the post of Secretary was one which ought to be passed on from one to another. He had "played his tune" in securing the services of leading lights in the profession for their meetings, and someone else should take up the matter. He thanked the meeting for the kind remarks on his services, and said he would give his successor whatever assistance lay in his power in furthering the interests of the Society.

The Position and Prospects of the Veterinary Profession.

Mr. W. AWDE, F.R.C.V.S., Stockton-on Tees, read the following paper on "The Veterinary Profession: Its Present Position and Future Prospects."

Mr. President and Gentlemen,—Knowing from personal experience the great difficulty that Secretaries of Veterinary Medical Associations have to contend with in persuading their members to introduce subjects for discussion, and having on a previous occasion refused your Secretary when he did me the honour to ask me, I felt it would be ungracious on my part to again wish to he excused when he asked me to provide a paper for this meeting. My consent was given with great reluctance, however, because in the first place it is always difficult to decide what subject to take which would be of sufficient interest to the members themselves that each would take part in the discussion and in the second, because of the consciousness on the part of the essayist of his inability to make the most of the subject when chosen.

My reason for electing to consider the present position and the future prospects of the profession was suggested to me by being its Jubilee year since the Charter was obtained just fifty years ago, and also an account of some newspaper correspondence which has lately appeared as to the wisdom or otherwise of the reforms which have been introduced by the council, of the Royal College of Veterinary Surgeons. The subject chosen cannot fail to be of interest to each one of us practising at the present time. It is one that we are all acquainted with and therefore in a position to say something about, and it is only by looking the defects of our present position fairly and squarely in the face and by free discussion amongst ourselves, that we can hope to influence the introduction of those reforms which we consider to be essential to the future welfare of our profession.

At the outset it will be necessary to say whether I approve of the recent reforms introduced by the Council of the R.C.V.S., and they are—first, higher education of the veterinary student before being admitted to his studies at the different colleges; and secondly, the extension of the period of study to four years, and extra examinations.

I am one of those individuals who believe in the wisdom of the steps taken, for the simple reason that (as we live in an age of education), unless we go forward, we must slip backward. We must progress with the times in which we live; there is no standing still; and unless the veterinary student can

pass a sufficiently high educational test, the profession must deteriorate. In fact, I believe that it has not been instituted a moment too soon, and that in the past, members of the profession have suffered somewhat from lack of it. The principal arguments advanced against the extension of the period of study seem to be that it will now take six years to qualify (but in the case of good students, this will enable them to spend two years as pupil with a veterinary surgeon in practice), and that the expense will be so great that the likeliest men to make good veterinary surgeons of will never enter.

Suppose it did take six years, as suggested; that does not seem, to my mind, to be too long a time, considering that until a few years ago it was thought necessary to bind a youth seven years to learn a trade which is purely mechanical, and surely it ought to take an equal length of time to master the details of a profession like ours, considering the subjects required to be taken up at the present time, viz., chemistry and elementary physics, materia medica, pharmacy, therapeutics, toxicology, zoology, botany, anatomy, physiology, histology, morbid anatomy, stable management, veterinary hygiene, dietetics, pathology, bacteriology, principles of shoeing, meat inspection, and the principles and practice of veterinary medicine and surgery, in addition to which he must have a thorough knowledge of the habits of healthy animals, and be able to diagnose lameness and disease correctly, and, in order to successfully carry on a practice, will require some elementary knowledge of book-keeping and commercial training.

The other argument I believe to have nothing in it, and that the best men will enter, and qualify themselves, too, if they really wish to do so.

Having considered the present position of the graduates, it will be necessary to say something with reference to that of the practising members. No doubt the members of our profession, as a whole, are considerably in advance of what they were, say, twenty-five years ago, and have bettered their position very much, socially as well as morally; but there is room for still greater improvement. I shall proceed to consider this part of the subject by asking myself the following question: Am I satisfied with the position of the practising veterinary surgeon at the present time? And can honestly say that I am not, because about one-half of the members of the profession do not obtain a livelihood through practising their profession, but by means of what are called combined callings, which, to my mind, is subversive of the profession's best interests. These combined callings include shoeing-forges, horse dealing, livery stables, and the like. Forges I object to on two grounds: first, because they tend to lower professional charges; and secondly, because they encourage quackery. Most veterinary surgeons having a forge dress horses' teeth before their men in nearly all cases brought there, and afterwards, when the men obtain forges of their own, they think they know how to do it, and do so, to the detriment of the veterinary practitioner. There are other operations in the same way, such as docking, etc. If a horse is to be cast for an operation, how often are the men brought from the forge to assist, thus giving away knowledge to them which is afterwards repaid with interest. Nearly all foot cases are so treated, and seldom find their way to the proper quarter, on account of the farrier considering himself proficient enough to cut out a horse's foot and advise as to treatment, whereas their ignorance is often lamentable. Livery stables are not so detrimental, but, nevertheless, derogatory to a M.R.C.V.S., and horse-dealing still more so, because, no matter how honest and straightforward the veterinary surgeon carrying on such a business may be, it is utterly impossible for him to maintain his reputation for being square, because if he rejects a horse as being unsound, he is immediately accused of having done so in order to sell one of his own horses to the would-be purchaser.

Another cause of the unsatisfactory condition of the profession is unsuitable

men entering its ranks; and this is mainly due to there being no compulsory pupilage. Men enter the colleges without having seen a day's practice; they probably have an idea that they would like the life, and being advised by the principals of colleges (when written to for a prospectus), to do so, they pay their fees and enter on their studies; and after having got so far through, they then go out to see practice in the country, to find out that they are unsuitable for the work, and would never be able to earn salt, and be only a laughing-stock for their clients. It is quite time that a certificate was required by the examiners, stating that the various students coming before them had been pupils for a period of, say, two years, with a duly-qualified veterinary surgeon. If this was carried out, the members of the profession would take good care that only likely men were sent on to college, thus saving their parents money, and the profession the subsequent disgrace. Advertising is distinctly unprofessional, and gives the man who does so an advantage over his brother practitioner who does not, and it ought to be limited to the sending of a card or an advertisement containing practitioner's name, qualification, and address. Another evil existing at present which requires a remedy, is that of covering unqualified men, which is commoner than some of us seem to think. I know of a case at the present time, but the difficulty in proving such in a court of law is very great; but it is a state of things which ought to be remedied. and the punishment for such cases should be very severe. At present lectures on veterinary science to farmers and others are being given by veterinary surgeons all over the country, to which I do not object, provided that they are given on proper lines; but think that in some cases the county councils have made a mistake in selecting newly-qualified men for the task. There is a large amount of valuable information which an experienced veterinary surgeon could impart to farmers with regard to the rearing and management of stock, which a young veterinary surgeon would not know, because he has not proved for himself their absolute ignorance of even elementary knowledge of these things, and the points on which they require information.

Newspaper articles, such as have appeared in the *Yorkshire Post* and *Leeds Mercury*, are a mistake, and only tend to the advertising and glorification of the individuals who write them, and do a certain amount of harm to the practitioners in the neighbourhood where the papers circulate.

Medicine Vendors.—Veterinary surgeons suffer very much (particularly in country districts), from medicine vendors, who hawk their medicines about by means of agents, and it is very rare indeed, in the country to be summoned to attend a case, but what the poor animal has been drugged with some of these so-called specifics. No doubt, at one time they supplied a want on account of the long distances which veterinary surgeons were away, and they must have something to be going on with until he came. But now the prevailing idea seems to be to try all the available remedies, with a view to save sending for the veterinary surgeon at all. I think the time has arrived when the Government of the day might, with advantage, impose a duty on all those so-called specifics, which would assist the revenue of the country, and help us to pay our way.

The present position of the army veterinary surgeon is eminently satisfactory, thanks, no doubt, in some measure, to those gentlemen who have held the office of principal veterinary surgeon to that department.

I wish as much could be said with regard to our position on the Board of Agriculture. Since the resignation of Professor Brown, the work of the department has been carried on by two members of the profession instead of three. There is thus an opening lost to the profession by the change, and not only so, but the Chief Travelling Inspector who, in Ireland, is a M.R.C.V.S., in this country is a layman, and so are all the staff, which is an anomaly

hardly creditable to the Government, or of the times in which we live. I am quite sure that if veterinary surgeons had been appointed at the time, to take in hand those duties which have devolved upon the present travelling inspectors in dealing first with outbreaks of pleuro-pneumonia, and now with swine fever, that the country would have been considerable gainers by the transaction. As it is, the dilatory way in which the Board of Agriculture has attempted to deal with the present outbreak of swine fever, has brought it into contempt all over the country, and made it a laughing stock.

Future prospects.—With regard to the future it seems to me that although there has been a falling off in the number of students entering the colleges as a whole during the year just ending, this is easily accounted for by the large increase which took place just before the new regulations came into force, with a view to evade them, but consider that in a short time they will resume somewhere near their normal proportions. If graduates continue to be turned out from the various colleges at anything like the same rate as heretofore, they will experience great difficulty in the way of making a livelihood, and in order to do so they will have to locate themselves more and more in the country villages. There has been a great deal of talk lately, and it is one of the problems yet to be solved, as to how to bring the agricultural labourer back to the land, but my firm conviction is that instead of the future veterinary surgeons flocking in such large numbers to the good-sized towns, that they will have to betake themselves to the small villages where they will be able to rent a suitable place for their purpose with a few acres of grass land at a very cheap rate indeed. But in order to do this the graduate will have to be prepared for the change and will have to be a thoroughly practical man and able to handle animals well; his knowledge of the domesticated animals other than the horse will require to be very much extended in order to make the most of himself. He will require to be an expert operator, able to castrate all animals and even fowls, and well up in obstetrics especially. In my opinion this can only be done by the enforcing of compulsory pupilage (mentioned previously) of two years with a properly qualified M.R.C.V.S., who should be limited to take no more than two pupils at one and the same time. As the registered practitioners die off, openings will present themselves for qualified men all over the country, and if the right class of men are forthcoming I have no fear of the result. At first possibly they might have to put up with low fees, but when the public (who require educating up to the point of employing duly qualified men instead of empirics) find the right material close at hand to select from, and that they get good value for their money, it will not take them long to make up their minds as to whom they should employ.

I am hopeful that in the future veterinary surgeons will be employed at each parturition case, particularly in the larger animals, mares especially, and believe that it will ultimately pay the owner to do so. They are opening their eyes to the fact that it pays to insure an animal against foaling risks, and am therefore hopeful that the other will come in time. I believe that in the future the line will be more clearly drawn between the town and country practitioners, and that those intending to practise in either capacity will have to stick to either the one or the other as their inclination leads them. The best man, no doubt, for the country practitioner is a farmer's son, and if he can combine farming (which seems in a bad way at present) with the practice of his profession, he is qualified to make an excellent living, and as far as I can see bring no discredit on the profession to which he belongs. As the general public become better educated in sanitary matters, I have no doubt that private slaughter-houses will be abolished and abattoirs set up instead in all large towns, and that when this is done meat inspection will be required at the hands of the town veterinary surgeon, who will also be required to

inspect periodically the dairy cows, and the buildings in which they are housed.

(To be continued.)

SOUTH DURHAM AND NORTH YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual Quarterly Meeting of this Association was held in the North-Eastern Hotel, Darlington, on Friday, December 7th, 1894, at 4 p.m., Mr. Alfred Peele, President, in the Chair. There were also present: Messrs. J. G. Deans, P. Snaith and H. H. Roberts, Bishop Auckland; C. G. Hill, Darlington; J. E. Peele, Durham; G. E. Gibson, Sedgefield; and W. Awde, Stockton-on-Tees.

Apologies for non-attendance were received from Professors MacFadyean and Williams, Messrs. Thomas Greaves and Henry Thompson.

Mr. PEELE, Sen., moved, and Mr. HILL seconded, that the minutes be taken as read and confirmed. This was carried.

The PRESIDENT moved, Mr. Roberts seconded, and it was carried unanimously, that the best thanks of the Association be accorded to Mr. Deans for his conduct in the Chair during his year of office.

Mr. DEANS read an article, which had appeared in an illustrated paper, on Bishop Auckland and neighbourhood, with reference to himself; but it was unauthorised by him, and he disclaimed all responsibility in connection therewith. Mr. Snaith also stated that he had been canvassed by the same firm who brought the article out, but he had declined to associate himself with them in any way.

The SECRETARY reported the receipt of a newspaper from the Yorkshire Association, containing one of a series of articles which were appearing weekly in the *Leeds Mercury*.

After some discussion, Mr. SNAITH proposed, and Mr. HILL seconded, that the Secretary be instructed to write to the Yorkshire Association, stating that they quite agreed with the action they had taken, and that they thought gentlemen in the position of Professor Axe should not lend themselves to work harm to the other members of his profession.

The adjourned discussion on Professor MacFadyean's paper on "Glanders" was then taken. Mr. Gibson, having had a case since the last meeting, gave the members all the information he could as to its history, progress, and the development of the disease until the animal was destroyed. He also exhibited the Schneiderean membrane, which showed the ulceration very clearly and was well marked.

Mr. ROBERTS reported that he had made a *post-mortem* examination on a pit pony, the liver of which weighed 25 lbs. He also related a remarkable case in a pony which fell in the pit, and behind a certain place in the dorsal vertebræ there was no sensation at all, and the posterior extremities paralysed; and the conclusion he came to was that its back was broken, and he ordered it to be destroyed. Before doing so, however, the pony was turned over on to the other side, when it got up and went to the manger to feed, as if nothing were amiss. The pony was also sensible to pain on puncture behind the place where the suspected fracture was. It was off work some time, and he formed the opinion that there must have been dislocation with pressure on the cord, and by turning the pony completely over it had been put right.

A letter was read from the Secretary of the R.C.V.S., asking what the Association intended to contribute towards the funds of the British Institute of Preventive Medicine; but after some discussion on the matter, it was decided to allow it to stand over until they had some more definite information with regard to the working of the Institute.

The adjourned discussion on Mr. H. Thompson's paper on Parturition was then taken, and after several members had spoken on the subject, the Secretary stated that the President and himself had been put on the Jubilee Memorial Committee, and he hoped the members would subscribe to it.

The PRESIDENT then nominated Mr. Joseph Smith, M.R.C.VS., Stokesley, and Mr. Henry Peele, M.R.C.V.S., Durham, as members of the Association; seconded by the Secretary, after which the meeting closed.

W. AWDE, *Hon. Sec.*

GLASGOW VETERINARY COLLEGE.

AT the Christmas Examinations, on the 17th and 18th Dec., the following gentlemen passed in Class A, or 1st Professional Examination:—Messrs. J. W. Conchie, Wolverhampton; D. Forwell, Greenock; P. McKinlay, Alexandria; A. Fraser, Largs; R. Peddie, Cathcart; J. C. Erskine, Bridge of Weir; R. Porteous, Maybole. The following gentlemen passed the B, or Second Professional, Examination:—R. McDonnell, Ballycastle, Co. Antrim; G. Thomson, Rusherford, Durham (1st class honour); W. A. Campbell, Barr, Ayrshire (2nd class honour); J. Brown, Airdrie (2nd class honour); J. McLean, Largs (2nd class honour); W. Neilson, Helensburgh; A. Sullivan, Govan (2nd class honour); R. Mitchell, Glasgow (1st class honour); H. MacVean, Duntocher (1st class honour). The following gentlemen passed in Class C, or Final Oral and Written Examination:—Messrs. J. H. Wilson, Glasgow; J. Gorman, Cardiff; A. M. Macdougall, Irvine; A. Hart, Glasgow; D. Brown, West Kilbride; D. Wylie, Stewarton, Ayrshire. The following gentlemen passed in Class C, Practical Examination, and were admitted members of the Royal College of Veterinary Surgeons:—Messrs. J. H. Wilson, Glasgow; J. Gorman, Cardiff; A. M. Macdougall, Irvine; A. Hart, Glasgow; D. Brown, West Kilbride; D. Houston, Port Glasgow; J. Hill, jr., Glasgow; and H. McCartney, Neilston, Renfrewshire.

SUFFOLK HORSE SOCIETY.

A COUNCIL meeting of this Society was held at the Town Hall on 2nd January. Mr. Thos. Girling presided, and the other gentlemen present included. Mr. Alfred J. Smith, Mr. Jas. Toller, Mr. J. A. Hempson, Mr. Horace Wolton, Mr. R. H. Wrinch, Mr. H. Showell, Mr. D. F. Smith, Mr. Wm. Wolton, &c.

It may be remembered that some dissatisfaction was expressed at a former meeting in reference to the disqualification of prize-winning Suffolks at the Royal Show by the veterinary examiners, and an opinion was expressed that the exhibitors should be made acquainted with the names of the gentlemen employed as examiners of the exhibits, and that there should not only be an examination of the stallions and brood mares, but of fillies as well.

The SECRETARY (Mr. Fred. Smith) read a letter he had received from Mr. Ernest Clarke, secretary to the Royal Agricultural Society, as follows:—"I duly laid before the Council at their last meeting the suggestions contained in your letter of August 8th, in reference to the publication of the names of the veterinary inspectors at the Society's country meetings. The Council instruct me to inform you in reply that the names of the veterinary inspectors selected for the Darlington meeting will be published, together with the names of the judges, in the Society's journal on March 31st next. I am to add that it would be quite impracticable to indicate beforehand the particular classes allotted to each veterinary inspector. The Council do not see their way to adopt the further suggestion of your Society, that veterinary examination should extend to fillies as well as stallions and brood mares."

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE half-yearly general meeting of the governors and members of the Royal Agricultural Society of England was held for the first time in the Society's new house, 13, Hanover-square, W. The chair was taken by Sir John H. Thorold, the newly-elected president of the society.

The PRESIDENT, in opening the proceedings, congratulated the members upon assembling for the first time in their new premises. He could not allow this occasion to pass without reminding them of the efforts of the Duke of Westminster and Sir Walter Gilbey, both of whom had been most instrumental in enabling them to acquire the beautiful premises in which they were assembled on this occasion for the first time. Although they were very comfortably housed in their new quarters, they could not conceal from themselves the fact that their expenses in the future would be very much increased; and he trusted that they would not fail to exert themselves to the utmost to induce gentlemen to join the society, by which means alone could they hope to meet the increased expenditure which must of necessity arise. Concluding, he expressed the hope that the accession to their new quarters, which afforded many advantages, would lead to the additional success of the society which they all desired so much to see in the future.

The SECRETARY read the report of the council, which showed that the total number of governors and members now on the register was 11,247, or a net increase of 28 members since the same period last year. The Darlington meeting would be opened in June next, and the county meeting of the society held in 1896, at Leicester. The special committee appointed by the council to inquire into the nature and causes of abortion in cattle recommended that for practical purposes and with a view to the adoption of the necessary precautions the disease should be deemed to be contagious, and stated that the evidence laid before the committee justified the adoption of the antiseptic treatment. Scientific investigations into the causes of abortion in cattle were now proceeding at the Royal Veterinary College, under a special grant of £200, made by the council for this purpose. The efforts of the Board of Agriculture to stamp out pleuro-pneumonia had been successful, only eight outbreaks having occurred in the course of last year, as compared with 35 in 1892 and 192 in 1891. The record of this year was still more satisfactory, as only two outbreaks were reported—one in Kent, and a second at Hendon. In each case the slaughter of the infected herd arrested the further progress of the disease. Swine fever had continued, however, to prevail in various parts of the kingdom, in spite of the measures which had been applied for its repression. Recently, however, there had been a considerable decrease in the number of outbreaks in Great Britian. An outbreak of foot-and-mouth disease was reported in the last week of October, in a small herd of cattle on a marsh at Rainham, Essex. All the animals were immediately slaughtered and buried, and other precautions were adopted. Since then two outbreaks had occurred, in Cambridge and Kent. In both cases the precautions adopted were successful in arresting the spread of the disease. The restrictions on the movement and sale of animals had been removed, except in small areas round the infected places. A considerable number of cases of rabies have been reported in Lancashire and Yorkshire (West Riding). In the Department of Comparative Pathology and Bacteriology established at the Royal Veterinary College by the aid of a grant from the society, the work in the Research Laboratory had taken a wide range, including investigations on tuberculosis, diphtheria, anthrax, swine fever and allied diseases of swine, ringworm in calves, diseases of the joints of foals, and the use of mallein and tuberculin for the detection of glanders and tubercle in the earliest stage. The further experiments which had been made had materially strengthened

the evidence in favour of both agents as aids to diagnosis in doubtful cases of disease.

Lord TREDEGAR moved and Mr. GEORGE GIBBONS seconded the adoption of the report.

In the discussion which followed, Sir HENRY THOMPSON expressed the hope that the council would only consent to thoroughly competent shoeing smiths, who, in addition to being able to shoe a horse, knew something of the anatomy of the animal's foot, being registered, and that they would not adopt the proposition of the Farriers' Company that an inferior degree should be given a blacksmith who could only remove and affix the shoe.

Sir RICHARD PAGET suggested that the society might with considerable advantage take into consideration the desirableness of making experiments with a view to improving the grass lands of the country.

Mr. LANGFORD asked whether the society should not do something to prevent the over-feeding of stock for exhibition purposes.

Mr. W. FORTUNE asked the society to assist in the crusade against adulteration, and

Mr. F. KING (Wealdstone, Middlesex) said there was too much of the tinsel of title on the council, and a great deal too little of science, which, if supported by the experience of practical agriculturists, could not fail to prove of great value to the society.

The report having been adopted, a vote of thanks to the President was passed.

The PRESIDENT, in acknowledging the vote of thanks, replied to some of the questions which had been raised. He said the question of the registration of "doormen" was one rather for the Farriers' Company to settle. There was no doubt that the blacksmiths proposed what might be called a trade union in regard to this matter, so that all their body might be certificated. Trade unions were a very important body nowadays, and the society thought that by enlisting the sympathy of the trade union they would be doing a good work. Certificates would only be given to competent men, and unless they could thoroughly agree with the Farriers' Company on the system to be adopted, the assent of the society to the scheme would be withheld. With regard to the suggested experiments with grass lands, he stated that at one of their farms they had for years sown certain plots with the different scientific discoveries of manure, and the results were very striking. He admitted that they had not as many practical men upon the council as they could wish, but this was due to the difficulty agriculturists experienced in leaving their farms to attend to the business of the society. If they were not all practical men on the council they had to undertake the cultivation of land, and their interests were entirely identical with those of the agriculturist. In devoting their time to the work of the society they believed that they were not only helping themselves but also agriculturists, and as long as he had the honour of being on the council he should feel it his bounden duty to assist as far as possible in the development of agriculture in this country.

The proceedings then terminated.

THE ONTARIO VETERINARY MEDICAL ASSOCIATION ANNUAL MEETING.

A GOOD gathering of the members of this association took place at the annual meeting, which was held in the Ontario Veterinary College, on Friday, December 21st. The retiring President, Mr. J. Burns, V.S., took the chair, and delivered an excellent address, in which he reviewed the events of interest to the profession during the past year.

The matter of issuing dental diplomas by irresponsible parties was then dealt with in a report from the Committee in charge of the matter. Several

members of the association having expressed their disapproval of such diplomas, the original Committee was empowered to proceed in their work of inquiry into the best means of abating the evil.

Mr. W. J. WILSON, V.S., then read an admirable paper on "Public Health as affected by Veterinary Hygiene." Public abattoirs were advised, the proper inspection of diseased meat dwelt upon, and sufficient air space for cattle in stables (especially cows) insisted upon. Mr. Wilson holds that at least 600 cubic feet per cow should be provided in this country, the allowance in Edinburgh being 1,500 cubic feet.

Mr. W. COWAN, V.S. (Government Inspector of Stock), in discussing this paper, remarked that the law was now quite sufficiently stringent to enable us properly to deal with tuberculosis. As inspector, he had intimate knowledge of the condition of stock through large sections of the country, and he could state that tuberculosis is decreasing.

Mr. A. CROWFORTH, V.S., of Lockport, N.Y., then read an exhaustive paper on "Tuberculosis."

After a full discussion of these papers, votes of thanks were very heartily accorded to the writers by the unanimous vote of the association.

The various reports were then taken, and passed, upon being found very satisfactory. A number of new members were admitted. By unanimous vote, the sum of twenty-five dollars was presented to the Ontario Veterinary College to provide a gold medal for the student passing the best general examination at the end of the spring term.

The officers were then elected, the President-elect, G. L. Robson, V.S., of Manchester, Ontario, taking the chair. After routine business, the association adjourned.

CHRISTMAS EXAMINATIONS, ONTARIO VETERINARY COLLEGE.

THE Government Board of Examiners for the examination of candidates for graduation in Veterinary Science met on December 20th. The large upper lecture room of the Ontario Veterinary College is admirably adapted for examination purposes, and in this room the Board met. A number of students presented themselves, and were most carefully investigated as to their attainments. After a searching examination, the following students were successful, and to them was awarded the diploma entitling them to practise:—

Ball, Nelson, Auburn, Ont.
Coleman, David H., Philadelphia.
Cunningham, Robert, Thorndale, Ont.
Dunn, George H., Erie, Pa.
Elliott, John T., Uxbridge, Ont.
Engel, John H., Milverton, Ont,
Friedheim, Louis, Rockhill, S.C.
Funston, Wm. H., Toronto, Ont.
Harrison, G. W., Souris, Man.
Hisey, Dan, Creemore, Ont.
Irvine, John D., Dalkeith, Ont.
Jemison, George, North Bay, Ont.
Kiethline, John T., Jenningsville, Pn.
Macdonald, John H., Wiarton, Ont.
McAfee, Robert A., Aylwin, Que.
Sawyer, S. Gordon, Boston, Mass.
Snider, J. Herbert, Guelph, Ont.
Swenerton, Wilson, Wawanesa, Man.
Thomlinson, Benjamin, Clinton, Ont.
Whybra, Farnell, Niagara Falls, N.Y.

Primary Examination—Freeman, Arthur P., anatomy and materia medica.

Extract from Foreign Journal.

M. NOCARD, at a meeting of the *Société Centrale de Médicine Vétérinaire*, held at Alfort, on the 13th December, presented some specimens of diseased tissue and made the following remarks:—

"The specimens which I have the honour to present to you are ganglionary tumours cut out, one from the breast of an ox nine years of age and the other from the fold of the flank of a bullock eighteen months old. They have been sent to me, steeped in methylated spirit, from Mauritius, by the owner of a herd of 460 head of cattle. In less than two years nearly two-thirds of the animals have been affected with similar lesions. Sometimes all the exterior glands are attacked, sometimes only a small number; frequently two indurated glands are united by a sort of sinuous cord, on which buds in the shape of beads appear, and the custom in Mauritius is to remove these tumours as soon as they become voluminous. There is often pus in the centre of them; sometimes at the *post-mortem* large soft tubercles are found in the lungs, but most frequently the animals remain in good condition and the lungs are found healthy on opening the carcase. The disease attacks young as well as adult animals. The owner wished to know if this was a case of tuberculous lesion. You will see from the specimens that it is a case of considerable hypertrophy of the ganglionary tissues, with a thick resisting layer of fibrous tissue on the periphery and multiplex foci of caseous softening in the central part. Examination of thin sections of the diseased tissue made after due hardening enables me to set aside as totally inadmissible the hypothesis of tuberculous lesion; in fact, it, on the contrary, enables me to connect the lesion with farcy. All round the softened parts the ganglionic tissue is filled with a considerable number of nodulous follicles, in form like tubercles, in the centre of which we find thick tufts of a filamentous microbe, branching out and tangled like brushwood, in all respects similar to the streptothrix of bovine farcy. I hope to receive soon, in sealed tubes, some pus collected pure in the centre of the softened ganglions, and to prove, by cultivations and inoculations, the identity of the two microbes, but the mere results of the bacteriological examination are sufficient, as I think, to enable me even now to decide upon this identity. It is interesting to note that farcy in cattle, which has become so rare in France that I have not for several years past been able to observe a single genuine case, continues its ravages in two countries so far apart as Guadeloupe and Mauritius."

Legal News.

AN ALLEGED PHENOMENAL GOAT. CLAIM AGAINST THE WORSLEY AGRICULTURAL SOCIETY.—At Salford County Court, before His Honour Judge Parry, J. T. Seddon, residing at Clifton, sued Mr. Upjohn, the Secretary of the Worsley Agricultural Society, for the second prize awarded to a goat which he exhibited at the last show. The plaintiff conducted his own case.—Mr. Bowden appeared for the defendant.—The plaintiff exhibited the goat in the class "under two years old," and was awarded the second prize, but a verbal objection was raised on the ground that the goat was more than two years old, and the veterinary surgeon of the society sustaining the objection, the prize had been withheld.—The plaintiff brought evidence to show that the goat was bought as a kid six weeks or two months old in July or August, 1893, in Withy-grove, Manchester, and therefore it was under two years old when exhibited at the show. The plaintiff said it had an abnormal development, and that was why he exhibited it.—Mr. Ashton, veterinary surgeon, Bolton, said he believed the goat had had a kid, for he milked it himself, and if

it were under two years old, it must be, as the judge had suggested, a phenomenal goat. He believed it must be five years old.—The plaintiff said he would have the goat killed, and a *post-mortem* examination made to show that it had never had a kid rather than lose the case.—The Judge said it would be a pity to kill it merely to prove the fact, and all the skilled opinions that might be presented would not alter the facts. If the plaintiff could bring further evidence to prove the age of the goat to be under two years the verdict would be in his favour, and for that purpose the case was adjourned until the 14th of December.—*Manchester Courier.*

THE DOG CROPPING CASE.—At Worship Street, on January 21st, Henry Cooper, dog fancier, of Pritchard's-road, Hackney, Robert Carling, and Mary Carling, his wife, appeared in answer to adjourned summonses charging them with cruelly ill-treating and torturing a certain dog and causing or procuring the same to be tortured and ill-treated.—Mr. Colam again appeared for the prosecution; Mr. Patrick Lynch now defended. The facts of the case have been partially before the Court, and it may be remembered that the question involved was as to the cruelty of cropping dogs' ears. The evidence given on the last occasion was by a man named Bilsom, who witnessed the cropping of a dog's ears by the defendant Robert Carling, the woman holding the dog.—Mr. Moore, veterinary surgeon, of Putney, corroborated the evidence of Bilsom as to the appearance of the dog. In cross-examination Mr. Moore said it was usual to crop the ears of bull-dogs and bull-terriers. It was also the practice to cut the ears of dogs hunting with packs—foxhounds and the like—but not to the extent that the dog in question had been cut. The ears of pack hounds were usually "rounded," because of going through hedges and bushes, where the ears would be torn. Similarly bull terriers' ears were cut to prevent injury by their fighting.—Professor Pritchard, late President of the Royal Veterinary College, residing at Regent's Park-road, was called by the prosecution to speak as to the cruelty of the operation of cropping, and said that no part of the skin of the animal body was more sensitive than the skin of the ear. In the course of the witness's examination it transpired that the dog which was the subject of the proceedings was in court, and was ordered to be produced. Mr. Pritchard, having examined it, agreed that not only were the ears cropped but that portions of the root of the ear had been removed. Such operations, he said, were extremely cruel, and the animal must have suffered great pain.—A lengthy cross-examination resulted, the witness in reply to questions saying that he was against the interference with dogs in any shape or form. He was also against the "docking" of horses, the dishorning of cattle, and generally the operations which were resorted to with animals.—Other evidence was given for the prosecution, and Mr. Lynch addressed the magistrate for the defence, submitting that the cropping was done in accordance with a custom which had long since obtained on the ground that it was an improvement to the dog as enhancing its value to its master and as protecting it from future and repeated injury. It was denied that the dog was an Irish terrier, but was of the bull breed, and of the kind that would fight. The rules of the Kennel Club, he said, were in his favour with that class of dog, as a bull terrier uncropped was not recognised at shows.—Mr. Vero Shaw was then called, and said he was a journalist, and the writer of "Cassell's Book of the Dog." He had kept dogs all his life, and had at one time eighty of the bull-terrier kind. It was, he said, impossible to keep bull-terriers without having their ears cut, as other dogs would injure them, and the cutting increased the value of the animal.—After a great deal of other evidence, Mr. Berry, judge at the Birmingham Dog Show, being one of the witnesses called for the defence, Mr. Bushby said he would read the whole notes of the case and take time to consider his judgment.—Mr. Bushby, on the defendants answering to their names, read

from notes, and said that, apart from the general question as to whether the cropping of bull terriers was lawful, it could hardly be disputed that defendants were liable for the special barbarity of mutilating the burrs of the ears of the dog that was operated on in the instance inquired into. The common practice was sought to be justified on two grounds—(1) that it enhanced the market value of the animals; and (2) that it was necessary for their own well-being. The first plea was, he thought, excluded by the case of "Ford *v.* Wiley," where it was laid down that, though severe operations, like that on the dog in question, might be performed, if without them the animals could not be fitted for their ordinary use, the mere fact that by such operations the market value was increased was not a valid excuse. The second plea he thought had not been proved by the evidence given for the defence. He had come to the conclusion that the defence had failed to vindicate the common practice of cropping, which had originated in the exigencies of dog fighting. He convicted defendants, but took into account the prevalence of the practice, and allowed them the option of a fine instead of ordering imprisonment. Each defendant was ordered to pay £5, the full penalty, and £2 2s. costs, or a month in default, with hard labour. Mr. Speechly, solicitor, appealed that the woman should be treated as acting under the coercion of her husband, but Mr. Bushby refused the request.

CLAIM FOR £30 DAMAGES TO A HORSE.—Thomas Barker, veterinary surgeon, Harrogate, sued Octavius Parker, butcher, for £30 damages to his mare, alleged to have been committed by a pony belonging to Octavius Parker whilst in his stable. Mr. R. A. Shepherd, barrister, of Leeds, instructed by Mr. T. Laycock, solicitor, appeared for the plaintiff; and Mr. F. Barber, solicitor, defended.—Mr. Shepherd said that plaintiff arranged to stable his mare in defendant's stable, and on the night of the 17th of September defendant's pony got loose and kicked the mare.—He then called Thomas Barker, veterinary surgeon, Harrogate, who deposed that he bought the mare from Mr. Fountain. In the early part of August he saw defendant about his stable. He made an arrangement with defendant to have the use of a stall or a loose box. He was to pay 10s. for keep and 2s. a week for the stable. On the 24th August he bought the mare and put her in a loose box. He lent the mare to Mr. Sheepshanks on the 5th September, and got her back on the 12th. Took the mare down to the stable and he found the loose box occupied by two sheep. He had the mare in the stall. On the 15th he took the mare to the stable and found the defendant had killed some sheep. The entrails of the sheep were behind the door and he saw a strap and a "cameril." There was blood on the floor and on the door, and the mare would not go in. On the 17th September he again tried to get the mare into the loose box but the mare would not go in. He saw defendant in the stable but made no complaint about her being there. Had seen defendant's pony tied up in the stall adjoining. The pony was fastened by part of a riding bridle which went round the neck. What should have been the chain was composed of pieces of ropes which tied up the hay. (Bridle and rope produced.) On the morning of the 18th he went down to the stable in response to what was said by defendant's boy. He found his horse standing on three legs. There were two boys employed by defendant present. The pony was tied up. He cut the rope from the manger. It was the bridle with which the pony was fastened up the night previous. A week or more before he drew defendant's attention to the way in which the pony was secured. He told defendant he should get a collar like his, when he replied it was a very good one. Defendant said he would send one of the boys to obtain a bridle. The conversation took place in the stable on the morning in question. He found the mare trembling, lame, and resting her near hind leg. He found her cut and marked on every leg, and a horse's teeth mark on her back near the

spine. The vulva was swollen and dark in colour. The near hock was very much enlarged both inside and out. He had to treat the mare for three weeks, and during that time she was no use to him. He rode a bicycle in place of the mare. After the accident the mare stayed in the defendant's stable a month all but two days. He took the mare away on the 13th October. The mare was away a week with Mr. Sheepshanks. He had had £30 bid for the mare the same day as the accident happened. He could not sell her for £30 now.—Cross-examined by Mr. Barber: Did not know the mare was in Knaresboro' that day. He had not given orders for the mare to be sent there or taken back. He bought the mare from Mr. Fountain, and was present when he bought her. The mare was bought on the station side of the bridge at Boroughbridge. There was nobody there that he knew when he bought the mare. It was on the 22nd June, the last day of the fair. It would be about four o'clock in the afternoon when they bargained for the mare. Mr. Fountain bought the mare for £8 10s. It was a fair price for the mare in the condition she was at the time, and without a character. He gave Fountain £10 for the mare. He had proved her to have a good character. He had the mare at Mr. Watson's, the horse-breaker's, on the 17th. He took her to Watson's to try her in double harness, and she went quietly. The mare did not try to hold the brake back when she was tried. The mare did not rear but jumped, and fell on her side. The mare did not cut the leather of the knee-cap in going down, but cut the padding. She was only down once. The horse was not dragged a considerable distance either in Skipton Road or any other road. Someone went to him in Grove Road, and asked him to go and see some pigs next day. Did not ask Watson if she would ever go. Watson did not say she might, but that she would never be fit to trust. John Holmes was present during the whole of the trial on the 17th September. The mare had not been tried since that occasion in double harness. The mare was quiet in double harness on the 17th. Prior to taking the mare to Watson's he had not tried her in double harness. The mare would be worth £20 or £25 if she was not quiet in double harness. He would take £15 for the mare. It was a visitor who offered £30 for her. If he had wanted to sell the mare at that time, he should have asked £35 or £40 for her. Did not make any inquiries where the visitor lived. They were outside Mr. Parker's shop when the bargain was made. Defendant said he had a stall and loose box to let when they were talking about stabling. When he took the mare, he found the two stalls were occupied. The mare was generally put into the loose box. Did not say anything about the mare being dangerous, but told him her height. Defendant did not say anything to him about danger if the two mares got together. He was to have either the loose box or the stable. He attended to the mare at once when he got there on the morning of the 18th. He attended to the mare four times that day. Did not say to the lad named Kendrew that he was to blame for bringing the mare out of the loose box. Did not say to defendant's brother it was a bad job, and that he wished he had not taken the mare out of the loose box. Did not examine the mare when defendant's brother was there. Mr. T. G. Parker did not draw his attention to the near-side hock. Did not say the mare had thrown herself down, and had jumped up quickly, and had caused the injury on the hock. When he was dressing the legs of the mare he said it was a bad job, and that she was blemished for life. He had intended running the mare at Pateley Bridge races. He made the claim for £30 damages in November, when Mr. Parker sent a letter demanding the money for the stables. He thought when he got the bill for the loose box it was time to make his claim, and he instructed his solicitor to write to the defendant and make the claim. At the time he was willing to have foregone the damage if he would have settled the account. The hock was slightly enlarged, and would be permanently so.

The mare was seven years old, rising eight. Some of the marks on the teeth showing the age of the mare, were visible when he bought her. On the 17th September his mare was not in use. He seriously accused the detendant of slaughtering sheep in the loose box on the 13th. He previously said the entrails of the sheep were on the floor behind the door. It would take four or five days for the smell to pass away. When he found out what was going on he did not make any complaint to the sanitary inspector, Mr. Parker, or anyone. He had both ridden and driven the mare. The mare was a strawberry roan with black legs, and he had a match for her.—Re-examined by Mr. Shepherd: When he bought the mare she was in poor condition, but in two months she was in first-class condition. The mare was a month in the stable after the accident, and was treated three weeks. The mare had not been fit to work until the present time. When his horse was tried in double harness it was quiet. The defendant's pony went out to work on the morning of the 18th. Nothing was said to him about the pony having kicked the mare.—Wm. Kemp, sanitary inspector of the borough of Harrogate, deposed that he knew the stables in question. He did not know that any sheep had been killed there. He suspected there had.—Charles Gray, eight years old, having been sworn, deposed that he knew Mr. Parker's stable. Had seen both live and dead sheep there. The sheep were killed in the loose box. He saw two sheep killed there on a Saturday. It was after the holidays when he saw the sheep killed.—[At this stage the boy burst into tears, and he was taken round to the judge on the bench, who soon cheered him up again.] The case was adjourned until the 20th December, when special court days will be held on that and the following days.—*Harrogate Herald.*

Notes and News.

In our last issue it was stated that foot and mouth disease had reappeared in East Kent, but this was proved to be a false alarm when the animals were examined by Professor Cope of the Board of Agriculture.

Honour to a Veterinary Surgeon.—In the distribution of New Year honours by Her Majesty the Queen, we are much pleased to note that the veterinary profession has not been overlooked. Veterinary-Captain J. A. Nunn, Principal of the Veterinary College at Lahore, Punjab, has been gazetted Companion of the Indian Empire, an honour conferring great distinction on him. This must be most gratifying to the whole profession.

Volunteer Veterinary Officers.—The new edition of the regulations for the Volunteer Force (1894), has the following paragraph added to it. "Every candidate for appointment must be a member of the Royal College of Veterinary Surgeons." As in previous years, no Veterinary Surgeons can have the letter P placed after his name in the Army List, unless he be a Fellow of the Royal College of Veterinary Surgeons, or has served in the Regular Army.

Sulphanilic Acid in Acute Catarrh.—According to Dr. Valentin, sulphanilic, or paranilino-sulphonic acid, is an excellent remedy in acute catarrh. From 30 to 60 grains may be prescribed with a somewhat smaller quantity of bicarbonate of soda in ten times its weight of distilled water once or twice daily. The effect of a dose becomes apparent in about two hours, and the amelioration it produces may be expected to continue for a whole day or even more. When sulphanilic acid is taken for some weeks it does not appear to disorder the digestion or to produce any unpleasant effect, except, perhaps, slight diarrhœa.—*Lancet.*

RABIES IN DOGS.—Cases of rabies are lately reported from Lanarkshire, Scotland, and from the West Riding of Yorkshire and Lancashire. They have been of a serious nature, many people having been attacked and bitten. At Lancaster, Messrs. Young and Robertson, M.R.C.V.S., found distinct appearances of Rabies on *post-mortem* examination, of a rabid dog that had bitten several people. Four of them have proceeded to the Pasteur Institute, Paris. At Barnsley, a gentleman and his groom were badly bitten by a dog certified to the rabid, who have also proceeded to Paris. From Lanarkshire, six children have been forwarded to the care of Pasteur. Stringent measures by the municipal and police authorities of these areas to prevent the spread of the disease, it is to be hoped, have been put in force.

BOYCOTTING AN ABATTOIR.—The abattoir, erected by the Corporation of Brighton with the double object of securing efficient inspection of the meat supply of the town, and of eventually clearing away the private slaughter-houses within the walls, was used for the first time a few weeks since, when a butcher and a pork-butcher commenced slaughtering. The abattoir was opened a little more than four months ago, since which time it has been standing idle; the butchers of the town, who had not viewed the project with much favour during the discussions that passed in the Council Chamber before the buildings were started, have joined in an effective boycotting of the new institution. The ostensible ground for the boycott is that a cooling chamber had not been provided, but as few, if any, of the private slaughter-houses are not provided with this appurtenance, it is thought that other reasons exist for the systematic neglect that the building has hitherto been subjected to. Even now only a fraction of the accommodation provided has been brought into use.

THE HORSE STRENGTH OF THE ARMY.—The last returns of the total of horses and mules in possession of the regular troops at home and abroad, for all purposes, shows that the number provided in the Army Estimates was well maintained last year, the total being 27,300. A very large proportion of the 27,300 are in India, where the British cavalry and artillery employ nearly the whole of the 12,500, independently of the horses of native cavalry regiments, who mount themselves for the most part on country-breds. Of the remainder of the army's horse strength, comparatively only a small proportion is distributed abroad—in Egypt and Natal, which have each a cavalry regiment. The thirty-one regular cavalry regiments in the service (including the Household troops), employ 12,500 horses, which leaves quite a third of the men unmounted. The artillery have rather over 12,000 animals, of which nearly 8,000 are on the establishment of the eighty field batteries, and 3,000 are with the twenty horse batteries or with the depots or riding establishment of those services. The remainder of the 12,000 artillery animals are mostly used by the mountain batteries in India. The forty companies (including the two remount companies) of the Army Service Corps, all retained at home, have rather more than 1,300 animals; the Royal Engineers, for mounted companies, telegraph and bridging corps, 400; and the infantry battalions at home, some 700, chiefly for regimental transport service.

ABORTION IN COWS.—We are indebted to the columns of our valuable contemporary, the *North British Agriculturist*, for the following remarkable testimony as to the medicinal value of carbolic acid as a remedy for abortion in cattle:—The herd of shorthorns, the property of Lord Fitzhardinge, on the Berkeley Cattle Estate, Gloucestershire, and formerly one of the leading herds in the country, had of late years been so decimated with the plague, that to stay its course, the herd was on the point of being slaughtered out altogether much to the regret of its noble owner. The estate agent at this crisis learned that in the New World carbolic acid in similar cases had been given with good

results, and at once proceeded to administer it to the pregnant cows of the herd, with remarkably successful results. Mr. James Peter, Lord Fitzhardinge's agent, in the issue of the above-named journal of January 9th, states that he has used carbolic acid regularly for the past three years, as a preventive against bacterial disease, and in all his experience never had animals keep so healthy as since he has done so. To quote his words, "The use of carbolic acid as a preventive of abortion, is commenced by mixing with sufficient hot water to make a bran mash, ¼ oz. ordinary crude carbolic acid, then add the bran, gradually increasing the carbolic acid to ½ oz., which is the maximum quantity I can get a cow to take in a bran mash. For a number of cows I measure out the requisite number of ½ oz. doses, and mix with the water and bran in a fodder barrow, and then give a good broad shovelful to each animal. Before I got rid of the disease I administered the carbolic mashes three times a week. I find it equally safe to give an animal a ½ oz. dose daily. The fact is unassailable that the subtle and persistent malady termed abortion in cattle has been arrested in its ravages among the shorthorn cows of Berkeley Castle, since the use of carbolic acid was introduced there, and it remains for stockowners and their veterinary advisers to continue an experiment which may turn out to be of incalculable value."

THE PROPOSED UNION OF VETERINARY COLLEGES.—A motion has been made in the Edinburgh Town Council by Messrs. Hay and Mitchell Thomson to remit to the Lord Provost's Committee to consider the advisability of effecting a union of the two veterinary colleges in the city—the Dick College in Clyde Street, and the New College in Elm Row. The proposal, whether anything definite comes of it or not, is one of considerable importance, affecting as it does the educational interests of an important profession. To those interested in the advancement of veterinary teaching in Edinburgh, and who would like to see one strong, effective college, the proposal has given much satisfaction, and a strong desire is expressed to see it accomplished. The advantages, it is pointed out, are very considerable. At present the two colleges in Edinburgh have each a full teaching staff at work, while the number of students in attendance at both colleges could quite easily be taught by the staff of one of the colleges. Time was when large numbers of veterinary students came annually to Edinburgh. Forces, however, have been and are at work which have effected a radical reduction in the numbers. The preliminary examination has been made much more difficult, with the result that fewer candidates get through. The curriculum has also been extended by one session to four complete sessions, which has also operated adversely. But probably a more important factor in reducing the number of students than any of these is the proposed establishment of an Irish veterinary college. Hitherto students from Ireland have formed the large majority at one of the colleges. With the establishment of a college in Ireland, it is safe to assume that the Irishmen will go in for Home Rule in this department, and not come to Scotland for what they can get at home. It is pointed out by those who advocate amalgamation that the present is a most opportune time for considering the question. Owing to the death of Principal Walley, there must necessarily be a rearrangement of the work of the Dick College, and there cannot be the same amount of professional prejudice as to the priority of the heads of the respective institutions. This, taken with what has been stated as to the probable future decrease of students, is a favourable element in the consideration of the matter. It seems in some quarters to be assumed that the chief opposition to the proposal would come from the Dick College, but the Town Council, if they are convinced that the union would be for the ultimate benefit of the science, would not be inclined to allow this to stand in the way. Of course, if there were a union, the buildings of one or other of the colleges would have to be disposed of, as they would not be

required. But here, again, it is pointed out that this need not be any obstacle as the buildings at Clyde Street are not very convenient for the work of the college, being much too confined. There is no "infirmary" on the premises, and this is a decided disadvantage. The buildings of the New College at Elm Row are constructed according to the latest and most approved sanitary and other principles, with "infirmary" attached. They are also open and cannot be obstructed any more than they are at present. One argument in connection with the union, which seems to have considerable force, is that were this to take place money might be granted for the prosecution of original research. At present, this has to be done almost entirely by the professors themselves. It is not to be expected that a question of this importance can be settled right off, there being various conflicting interests which will require both time and tact to harmonise. All the same, however, the difficulties are not insuperable, but are such as may be overcome by a body like the Corporation of Edinburgh.—*Edinburgh Evening News.*

Correspondence.

NOTICE TO CORRESPONDENTS.

Contributors who send illustrations with their papers are requested to make their drawings (on white paper) in distinct black lines, with rather strong contrasts between the high lights and deep shades. Water-colour drawings cannot easily be utilised in producing process-blocks for the modern methods of book-illustration in black and white.

THE PROFESSIONAL OUTLOOK.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—I feel under compulsion to acknowledge the generous compliments that you have paid me in the January issue of the VETERINARY JOURNAL on my retirement from its management, and to express the hope that I have deserved all the kind expressions that you so lavishly render.

These expressions are in marked contrast to those emitted at the Council Meeting of the Royal College of Veterinary Surgeons, on November 28th and reported in the number of the Journal referred to. At that meeting I am charged with perpetrating a deception on the public, by examining shoeing-smiths in a little underground office for five minutes, asking them a few questions, and then sending them forth into the world as registered shoers. These statements are wholly and entirely untrue, as I have never examined anyone in an underground office, and certainly have never examined shoers for only five minutes, nor yet for ten minutes, but for at least fifteen or twenty or for even forty minutes, according to requirements.

I have only further to add that it is in my opinion a very unfortunate thing that the president should become a partizan of the person who made these unfounded statements, in that, he not only permitted the personal attack to be made upon me, by Mr. J. A. W. Dollar, but also stated that he did not object to it. He ought to have been aware that the statements made were unfounded.—I am, etc.,

GEORGE FLEMING.

To the Editor of the VETERINARY JOURNAL.

SIR,—I quote a description of a perfect horse as described in a thrilling story in this month's ——— magazine. I think it is too good to be missed:—

"He was a bright bay, with black points, and stood nearly 16 hands, with a

head that was faultless from the tip of the silky ear to the pink of the perfect nostril and the lustre of the big, kind eye. *A trifle short in the back, perhaps, but how well ribbed up*, and what quarters, and what a shoulder, *with its bunches of muscle* and its grand proportions; and his legs as clean as a whistle, *with their long powerful stifles* and sinews as strong as steel."—I am, etc.,

SMILES.

THE JUBILEE MEMORIAL.

To the Editor of the VETERINARY JOURNAL.

SIR,—I should be much obliged if you would insert in your next issue the subjoined list of the members of THE JUBILEE MEMORIAL COMMITTEE, and allow me to intimate that members of the profession who may be willing to join and assist the Committee in promoting the success of the Memorial, are cordially invited to communicate with the Chairman, Mr. R. C. Trigger, Newcastle-under-Lyme.

The first list of subscribers will be published in March. Donations will be received and acknowledged by the Treasurer, Mr. F. W. Wragg, 17, Church Lane, Whitechapel, E., and by—Yours faithfully,

J. MACQUEEN.

Royal Veterinary College, London, N.W.

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To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—The case which I detail below was one of a foxhound puppy we were walking. I must confess my diagnosis was at fault, but perhaps the case may be instructive to those who may have a similar one.

"Spoiler" was six months old and was just beginning to tear up the mats, run off with the sponges, etc., and when you were wound up to that point when he must be beaten and you went in search of him with anger in your heart and a whip in your hand, he sat calmly watching you approach, with his head on one side and an innocent look in his eye that caused you to think better of your fell design and more leniently of his youthful foible, and the consequence was he was forgiven. On Thursday he followed the trap, but next day was ill. Violent purging, very fœtid and light-coloured fæces, vomiting mucus tinged with blood, great prostration, sunken eyes, great thirst, yellow colour on the mucous membranes and belly, constantly sitting up and letttng himself slip down, apparently suffering from some irritant poison, and was treated for such.

Saturday much worse, symptoms more accentuated, eyes more sunken, hopeless expression of countenance, no indication of pain when handled, mucous membranes orange colour, breathing slightly accelerated. Sunday, sinking; rapidly got up, stretched his neck upwards, and then fell down on one side; propped himself against the wall, eyes closed, and body motionless, except for the breathing; he then slipped down on the straw. Suddenly he threw himself forward as if in a fit, rolled from side to side, half raised himself, fell headlong, and died.

The *post-mortem* examination showed that there was intussusception of the bowels in three different places. The other organs were in a normal condition.—Yours faithfully,

J. H. WILSON.

NEWBURY, *12th January*, 1895.

TOWN FIELD. KEIGHLEY,
9th January, 1895.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—I have forwarded per Midland Railway to-night, a morbid specimen, which you may perhaps deem of interest, and worthy of note in your new JOURNAL. I will, therefore, briefly state the history of the case.

I was called upon, on Monday last, to visit and examine a bay pony, about twelve hands high, and rising four years old, which had been led out for exercise in the morning of the same day. After being out for half-an-hour in a field adjoining the stable, and when the man was turning the animal round, it fell on its side, without seeming to have slipped (although the ground was covered with snow), and was then unable to rise. The groom proceeded for assistance, and he and another man tried to help it on to its feet; they managed to get it up once, but the fetlocks knuckled forward, and the pony fell again. No subsequent endeavours would induce the pony to try to rise, and so it was drawn into a loose-box, and made as comfortable as possible until my arrival. I found it lying on the right side, showing no signs of pain, with pulse beating eighty per minute, and internal temperature (vagina) only 98 F. I then examined the limbs, and found that the point of each hock (os calcis) was detached from the main body of that bone; there was no swelling of the parts or external bruise, and no pain was evinced upon manipulation. I could detect no other deviation from the normal condition.

The pony remained recumbent and died at nine o'clock to-day (Wednesday). Upon *post-mortem* examination, I found that six ribs were fractured on the right side, two of which had pierced the lung, and lacerated that organ. The hocks when denuded of the skin showed extravasation of blood, and that the epiphysis of each os calcis was detached from the body of the bone. Is it not very unusual to have such a condition of things in a three year old, and did the fall result from this condition, or was it produced by the subsequent effort to rise?

With best wishes for success to your new journalistic venture, I am, yours faithfully,

GEO. W. CARTER.

[The parts sent by Mr. Carter were duly examined, and the bone was found to present the condition termed osteo-porosis. Doubtless the ribs and other bones of the skeleton would be in a similar condition. The engorgement of the blood vessels and the dilatation of the Haversian canals were very marked features of the pathological condition.—ED.]

THE VETERINARY PROFESSION IN COURTS OF LAW.

To the Editor of the VETERINARY JOURNAL.

SIR,—Whether for the sake of the fee or paltry flattery of having won a case in court, some of the most illustrious members of our profession will go and give evidence against a brother professional, I can't say. I think it looks very humiliating and degrading that when one of our members will take the onus and responsibility of sticking up for the poor man, and ordering his horse to work, irrespective of the opinion of a Cruelty to Animals Inspector, that there are members of our profession who will come and give their most conclusive opinion that the animal is not fit to work, and as it is expensive for the member who may be defending the case to bring professors (who might be better employed) to back up his opinion, the weight of evidence will most assuredly carry the case in favour of the Society. What chance has a single practitioner against the hirelings of a Cruelty to Animals Society, unless he be possessed of unlimited means. *Vis Unita Fortior.*

Bishop Auckland. JAMES G. DEANS.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from Dr. Geo. Fleming, C.B., E. Wallis Hoare, F.R.C.V.S., Ontario Veterinary College, Ontario Veterinary Medical Society, W. Awde, F.R.C.V.S., J. Armstrong, M.R.C.V.S., J. H. Wilson, M.R.C.V.S, Newbury, Geo. W. Carter, F.R.C.V.S., Professor Macqueen, Dr. Haslam, F.R.C.V.S., A.V.D., F. C. Mahon, M.R.C.V.S.

BOOKS AND PAMPHLETS: "Eloge de H. Bouley, par Camille Leblanc;" "Annales de Medecine Veterinaire;" Royal Commission on Horse Breeding. Queen's Premiums.

JOURNALS, ETC.: *The Veterinarian, The American Veterinary Review, The North British Agriculturist, The Horticultural Review, L'Allevotore, Cape Colony Agricultural Journal, Recueil de Medecine Veterinaire.*